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3M

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M™ Green Corps™ Depressed Center Wheel, Cutting and Grinding Wheels
MANUFACTURER: 3M
DIVISION: Abrasives Systems Division

ADDRESS: 3M Center
St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 01/27/11
Supercedes Date: 03/01/10

Document Group: 16-6476-2

Product Use:
Intended Use: Abrasive Product

SECTION 2: INGREDIENTS

Ingredient	C.A.S. No.	% by Wt
Aluminum Oxide Mineral	1344-28-1	50 - 60
Zirconium Oxide Mineral	1314-23-4	10 - 15
Ceramic Materials	66402-68-4	1 - 5
Inorganic Fluoride	15096-52-3	2 - 10
Cured Resin	Mixture	10 - 20
Fiber Glass Cloth Screen	None	5 - 15
Metal Ring	Mixture	1 - 5

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Solid Abrasive Product
General Physical Form: Solid
Immediate health, physical, and environmental hazards: This document covers only the 3M product. For complete assessment, when determining the degree of hazard, the material being abraded must also be considered.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:
Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Dust created by cutting, grinding, sanding, or machining may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact:
Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Inhalation:
Dust from cutting, grinding, sanding or machining may cause irritation of the respiratory system. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Dust from cutting, grinding, sanding or machining may cause target organ effects.

Prolonged or repeated exposure may cause:

Pneumoconiosis: Sign/symptoms may include persistent cough, breathlessness, chest pain, increased amounts of sputum, and changes in lung function tests.

May be absorbed following inhalation and cause target organ effects.

Ingestion:
No health effects are expected.

Target Organ Effects:
Prolonged or repeated exposure may cause:

Hard Tissue Effects: Signs/symptoms may include color changes in the teeth and nails; changes in development of bone, teeth or nails; weakening of the bones; and/or hair loss.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: No need for first aid is anticipated.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*

5.2 EXTINGUISHING MEDIA
Ordinary combustible material. Use fire extinguishers with class A extinguishing agents (e.g., water, foam).

5.3 PROTECTION OF FIRE FIGHTERS
Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).
Unusual Fire and Explosion Hazards: Not applicable. None inherent in this product.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Not applicable.

6.2. Environmental precautions
Not applicable.

Clean-up methods
Not applicable.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING
For industrial or professional use only. Avoid breathing of dust created by cutting, sanding, grinding or machining. Avoid eye contact with dust or airborne particles. Damaged product can break apart during use and cause serious injury to face or eyes. Check product for damage such as cracks or nicks prior to use. Replace if damaged. Always wear eye and face protection when working at sanding or grinding operations or when near such operations. Sparks and particles flying from the product during sanding or grinding can cause injury and fire.

7.2 STORAGE
Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Provide appropriate local exhaust for cutting, grinding, sanding or machining. Provide ventilation adequate to control dust concentrations below recommended exposure limits and/or control dust. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact. To minimize the risk of injury to face and eyes, always wear eye and face protection when working at sanding or grinding operations or when near such operations. The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection
Avoid skin contact. Wear appropriate gloves to minimize risk of injury to skin from contact with dust or physical abrasion from grinding or sanding.

8.2.3 Respiratory Protection
Avoid breathing of dust created by cutting, sanding, grinding or machining. Assess exposure concentrations of all materials involved in the work process. Consider material being abraded when determining the appropriate respiratory protection. Select and use appropriate respirators to prevent inhalation overexposure.
Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with N95 particulate filters. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing
Not an expected route of exposure. Wash hands after handling and before eating.

8.3 EXPOSURE GUIDELINES

Ingredient	Authority	Type	Limit	Additional Information
Aluminum Oxide Mineral	CMRG	TWA	1 fiber/cc	
Aluminum Oxide Mineral	OSHA	TWA, respirable fraction	5 mg/m3	
Aluminum Oxide Mineral	OSHA	TWA, as total dust	15 mg/m3	
FLUORIDES	ACGIH	TWA, as F	2.5 mg/m3	
FLUORIDES	OSHA	TWA, as dust	2.5 mg/m3	
FLUORIDES	OSHA	TWA, as F	2.5 mg/m3	
ZIRCONIUM COMPOUNDS	ACGIH	TWA, as Zr	5 mg/m3	
ZIRCONIUM COMPOUNDS	ACGIH	STEL, as Zr	10 mg/m3	
ZIRCONIUM COMPOUNDS	OSHA	TWA, as Zr	5 mg/m3	

SOURCE OF EXPOSURE LIMIT DATA:
ACGIH: American Conference of Governmental Industrial Hygienists
CMRG: Chemical Manufacturer Recommended Guideline
OSHA: Occupational Safety and Health Administration
AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Solid Abrasive Product
General Physical Form:	Solid
Autoignition temperature	*Not Applicable*
Flash Point	*Not Applicable*
Flammable Limits(LEL)	*Not Applicable*
Flammable Limits(UEL)	*Not Applicable*
Boiling Point	*Not Applicable*
Vapor Density	*Not Applicable*
Vapor Pressure	*Not Applicable*

Specific Gravity	*Not Applicable*
pH	*Not Applicable*
Melting point	*Not Applicable*
Solubility In Water	*Not Applicable*
Evaporation rate	*Not Applicable*
Kow - Oct/Water partition coef	*Not Applicable*
Viscosity	*Not Applicable*

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
None known

10.2 Materials to avoid
None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Hydrogen Fluoride	During Combustion

Hazardous Decomposition: Under recommended usage conditions, hazardous decomposition products are not expected. Hazardous decomposition products may occur as a result of oxidation, heating, or reaction with another material.

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION
Not determined.

CHEMICAL FATE INFORMATION
Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Since regulations vary, consult applicable regulations or authorities before disposal.

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14:TRANSPORT INFORMATION

Not regulated per U.S. DOT, IATA or IMO.

These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
Contact 3M for more information.

311/312 Hazard Categories:
Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

Ingredient	C.A.S. No	% by Wt
Aluminum Oxide Mineral	1344-28-1	50 - 60

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

Contact 3M for more information.

INTERNATIONAL REGULATIONS
Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification
Health: 1 **Flammability:** 1 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the

inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:
Copyright was modified.
Section 8: Respiratory protection information was modified.
Section 8: Eye/face protection information was modified.
Section 8: Respiratory protection - recommended respirators information was modified.
Section 14: Transportation legal text was modified.
Section 9: Boiling point information was modified.
Section 5: Flammable limits (UE) information was modified.
Section 5: Flammable limits (LEL) information was modified.
Section 9: Property description for optional properties was modified.
Section 9: Flammable limits (LEL) information was modified.
Section 9: Flammable limits (UEL) information was modified.
Section 2: Ingredient table was modified.
Section 10: Materials to avoid physical property was modified.
Section 10: Conditions to avoid physical property was modified.
Section 15: EPCRA 313 information was added.
Section 15: EPCRA 313 text was added.
Section 6: 6.2. Environmental precautions heading was added.
Section 6: 6.1. Personal precautions, protective equipment and emergency procedures heading was added.
Section 6: Personal precautions information was added.
Section 6: Methods for cleaning up information was added.
Section 6: Clean-up methods heading was added.
Section 6: Release measures heading was deleted.
Section 15: WHMIS regulations heading was deleted.
Section 15: WHMIS regulations information was deleted.

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**048.1400935.076**
Product Name:	048.1400935.076 12 OZ BLACK /GRAY
Product Use:	Paint product.
Print date:	08/Feb/2011
Revision Date:	08/Feb/2011

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-332-7371
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- May cause frostbite
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Kidney injury may occur.
- Liver injury may occur.
- Blood disorders
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
PROPANE 74-98-6	15 - 20	Propane
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
XYLENE 1330-20-7	1 - 5	Xylenes (o-, m-, p- isomers)
BUTYL ACETATE 123-86-4	1 - 5	n-Butyl acetate
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene
TITANIUM DIOXIDE 13463-67-7	.1 - 1	Titanium dioxide
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Carbon black

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Chemical goggles, also wear a face shield if splashing hazard exists.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
XYLENE 1330-20-7	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA 710 mg/m^3 TWA		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	.1 - 1	15 mg/m^3 TWA dust total		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA			
XYLENE 1330-20-7	1 - 5	100 ppm TWA	150 ppm STEL		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA	200 ppm STEL		

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		
TITANIUM DIOXIDE 13463-67-7	.1 - 1	10 mg/m^3 TWA			
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68ºF (20ºC)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.37
Specific Gravity:	.76
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat

11. TOXICOLOGICAL INFORMATION

XYLENE 1330-20-7	1 - 5	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
BUTYL ACETATE 123-86-4	1 - 5	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat
TITANIUM DIOXIDE 13463-67-7	.1 - 1	> 10000 mg/kg Oral LD50 Rat
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. IARC has classified carbon black as possibly carcinogenic to humans (Group 2B). Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]
TITANIUM DIOXIDE 13463-67-7	.1 - 1			Monograph 47 [1989]
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1			Monograph 65 [1996]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	10 - 15			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence
XYLENE 1330-20-7	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence
TITANIUM DIOXIDE 13463-67-7	.1 - 1			male rat-negative; female rat-negative; male mice-negative; female mice-negative

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans
TITANIUM DIOXIDE 13463-67-7	.1 - 1	Present		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Present		

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35			5000
XYLENE 1330-20-7	1 - 5		form R reporting required for 1.0% de minimis concentration	100
BUTYL ACETATE 123-86-4	1 - 5			5000
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTYL ACETATE	123-86-4
XYLENE	1330-20-7
NAPHTHA	64742-88-7
AROMATIC NAPHTHA, LIGHT	64742-95-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret
PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

16. OTHER INFORMATION

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	08/Feb/2011
Revision Date:	08/Feb/2011

valspar
if it matters, we're on it.®

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**059.TY25663.076**
Product Name:	059.TY25663.076 HITACHI SPKLING WHI
Product Use:	Paint product.
Print date:	12/Oct/2011
Revision Date:	11/Oct/2011

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-851-7000
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- May cause frostbite
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Kidney injury may occur.
- Liver injury may occur.
- Blood disorders
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	20 - 25	Propane
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
TITANIUM DIOXIDE 13463-67-7	5 - 10	Titanium dioxide
BUTYL ACETATE 123-86-4	1 - 5	n-Butyl acetate
XYLENE 1330-20-7	1 - 5	Xylenes (o-, m-, p- isomers)
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Carbon black

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Chemical goggles, also wear a face shield if splashing hazard exists.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	20 - 25	1000 ppm TWA 1800 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	5 - 10	15 mg/m^3 TWA dust total		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA 710 mg/m^3 TWA		
XYLENE 1330-20-7	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	20 - 25	1000 ppm TWA			
TITANIUM DIOXIDE 13463-67-7	5 - 10	10 mg/m^3 TWA			
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA	200 ppm STEL		

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
XYLENE 1330-20-7	1 - 5	100 ppm TWA	150 ppm STEL		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.53
Specific Gravity:	.78
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide. Metal oxide fumes.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	20 - 25	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
TITANIUM DIOXIDE 13463-67-7	5 - 10	> 10000 mg/kg Oral LD50 Rat

11. TOXICOLOGICAL INFORMATION

BUTYL ACETATE 123-86-4	1 - 5	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
XYLENE 1330-20-7	1 - 5	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. IARC has classified carbon black as possibly carcinogenic to humans (Group 2B). Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	5 - 10			Monograph 47 [1989]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1			Monograph 65 [1996]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	10 - 15			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence
TITANIUM DIOXIDE 13463-67-7	5 - 10			male rat-negative; female rat-negative; male mice-negative; female mice-negative

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
XYLENE 1330-20-7	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	5 - 10	Present		
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Present		

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40			5000
BUTYL ACETATE 123-86-4	1 - 5			5000
XYLENE 1330-20-7	1 - 5		form R reporting required for 1.0% de minimis concentration	100
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTYL ACETATE	123-86-4
XYLENE	1330-20-7
TITANIUM DIOXIDE	13463-67-7
NAPHTHA	64742-88-7
AROMATIC NAPHTHA, LIGHT	64742-95-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

16. OTHER INFORMATION

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	12/Oct/2011
Revision Date:	11/Oct/2011

Material Safety Data Sheet
94203 Gust™ Easy Duster

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Stoner Incorporated
1070 Robert Fulton Hwy.
Quarryville, PA 17566
1-800-227-5538

Product Name:	Gust™ Easy Duster
Product Code:	94203
Version Date:	09/05/07
24-hour emergency phone:	1-800-424-9300 [CHEMTREC]

2. COMPOSITION / INFORMATION ON INGREDIENTS

		Exposure Limits		
COMPONENT	**CAS #**	**ACGIH TLV**	**OSHA PEL**	**OTHER**
Halogenated hydrocarbon	75-37-6	None established	None established	None established

3. HAZARDS IDENTIFICATION

POTENTIAL ACUTE [single or short term] HEALTH EFFECTS OF OVEREXPOSURE

Eye : May cause eye irritation. Symptoms may include stinging, tearing, and redness.

Skin : Liquid may cause frostbite.

Ingestion : Ingestion is not considered a potential route of exposure.

Inhalation : Breathing large amounts may be harmful. Inhalation of concentrations above the recommended limits may cause temporary central nervous system depression with anesthetic effects such as dizziness, headache, incoordination, and loss of consciousness.

POTENTIAL CHRONIC [long term] HEALTH EFFECTS OF OVEREXPOSURE:

General Effects: No chronic health effects known.

Cancer Information: THIS PRODUCT CONTAINS NO COMPONENTS LISTED AS CARCINOGENIC BY IARC, NTP, OR OSHA 1910(Z)

Mutagenicity: No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

HMIS® III* HAZARDOUS WARNINGS:

Health: 1 Flammability: 2 Physical: 1 Personal Protective Equipment See Section 8

* See www.paint.org/hmis or call the NPCA at 1 (202) 462-6272 for more info on this current rating system.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes gently with plenty of water for at least 15 minutes while holding eyelids apart. If symptoms persist or there is visual difficulty, seek medical attention.

Skin Contact: In case of contact, immediately wash contaminated area with plenty of water for at least 15 minutes. Remove contaminated clothing. Seek medical attention if symptoms persist. Wash clothing before reuse.

Ingestion: Ingestion is an unlikely route of exposure.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

NOTES TO PHYSICIAN:

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used only in situations of emergency life support.

5. FIRE FIGHTING MEASURES

Fire and/or Explosion Hazards: Contains an Extremely Flammable Gas: can readily form explosive air/gas mixture at room temperature or at lower temperatures that are above the flash point. Containers may rupture or explode under fire conditions.

Fire Fighting Instructions: Use dry chemical, foam, or CO2; water may be ineffective but should be used to keep exposed containers cool. Fire fighters should wear normal protective equipment and positive-pressure self-contained breathing apparatus.

Aerosol Flame Projection Test: Non-flammable aerosol, as determined by ASTM D3065-94. However, this product contains components which may be ignited under certain circumstances. Do not use near ignition sources such as sparks or open flames.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Ventilate contaminated area. Remove all sources of ignition. Wear appropriate personal protective equipment (PPE). Stop or reduce discharge if it can be done safely.

7. HANDLING AND STORAGE

Handling: Use with adequate ventilation. Do not use near ignition sources.

Storage: Store in a cool, dry, well ventilated area away from all sources of ignition. Do not store at temperatures above 120 degrees F. Empty container may contain residues which are hazardous.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Ventilation should be adequate to prevent exposures above the limits indicated in "Section 2" of this MSDS (from known, suspected or apparent adverse effects).
Eye Protection:	Wear chemically resistant safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid or airborne material. Do not wear contact lenses. Have an eye wash station available.
Skin Protection:	The use of chemically resistant gloves is recommended if there is any possibility of prolonged or repeated liquid contact with skin.
Respiratory Protection:	None required for well ventilated situations. A supplied air respirator should be used if ventilation is not sufficient to maintain exposure limits. Use NIOSH approved respirator where there is likelihood of inhalation of the product mist, spray or aerosol.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Aerosol can	Vapor Density:	[air = 1] 2.40
Appearance:	Colorless gas	Evaporation Rate:	<0.020 (n-Butyl acetate = 1)
Odor:	Slight ethereal.	Solubility in Water:	Negligible; 0-1%
Specific Gravity:	0.9 (H2O=1)	Boiling Point:	-13 deg F
Vapor Pressure:	3516.9 mmHg @ 70 deg F	pH:	Not applicable

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable.
Conditions to Avoid:	Avoid contact with: Alkali. Alkaline earth metals. Freshly abraded aluminum surfaces. Powdered metals. Avoid open flames and high temperatures.
Decomposition Products:	This material can be decomposed by extremely high temperatures (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and carbonyl fluoride.

11. DISPOSAL CONSIDERATIONS

Disposal : Dispose according to Federal, State and local regulations.

12. TRANSPORTATION INFORMATION

Agency	Proper Shipping name	UN Number	Hazard Class	Packing Group
DOT	Consumer commodity	Not applicable	ORM-D	Not applicable
IATA	Refrigerant gas R 152a	UN1030	2.1	Not applicable

13. REGULATORY INFORMATION

Warning: This product contains the following chemicals that are subject to reporting requirements for the following regulatory bodies listed below:

COMPONENT	CAS #	% BY WEIGHT	Regulatory Body
No components listed in this section.			SARA Section 313

Warning: This product may contain chemicals known to the State of California to cause cancer. See list below.
No components listed in this section. Prop65 Cancer

Warning: This product may contain chemicals known to the State of California to cause birth defects. See list below.
No components listed in this section. Prop65 Birth Defects

All components of this product are listed on the TSCA inventory.

This information contained in this MSDS is believed to be accurate as of the version date, but is not warranted to be. Since the use of this information and the conditions of use of this product are not within the control of Stoner Inc, it is the user's obligation to determine the conditions of safe use.

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**048.1400012.076**
Product Name:	1400012H2 YELLOW PRIMER
Product Use:	Paint product.
Print date:	24/Dec/2010
Revision Date:	24/Dec/2010

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-332-7371
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation
- Risk of serious damage to eyes.

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Dermatitis
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Harmful if swallowed.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- May cause frostbite
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Liver injury may occur.
- Kidney injury may occur.
- Blood disorders
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- Prolonged exposure over TLV may produce pneumoconiosis.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
PROPANE 74-98-6	15 - 20	Propane
NAPHTHA 64742-89-8	5 - 10	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
TALC 14807-96-6	1 - 5	Talc (Mg3H2(SiO3)4)
STODDARD SOLVENT 8052-41-3	1 - 5	Stoddard solvent
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY 64742-82-1	1 - 5	Naphtha, petroleum, hydrodesulfurized heavy
MINERAL SPIRITS 64742-47-8	1 - 5	Petroleum distillates, hydrotreated light
ISOBUTYL ALCOHOL 78-83-1	1 - 5	Isobutyl alcohol
NAPHTHA 64742-48-9	1 - 5	Naphtha, petroleum, hydrotreated heavy
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
ZINC OXIDE 1314-13-2	1 - 5	ZINC OXIDE

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
TALC 14807-96-6	1 - 5	Respirable. Listed. Total dust. Listed.		
STODDARD SOLVENT 8052-41-3	1 - 5	2900 mg/m^3 TWA 500 ppm TWA		

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
ISOBUTYL ALCOHOL 78-83-1	1 - 5	100 ppm TWA 300 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m^3 TWA dust total		
ZINC OXIDE 1314-13-2	1 - 5	15 mg/m^3 TWA dust total 5 mg/m^3 TWA fume 5 mg/m^3 TWA respirable fraction		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA			
TALC 14807-96-6	1 - 5	2 mg/m^3 TWA respirable fraction, particulate matter containing no asbestos and <1% crystalline silica			
STODDARD SOLVENT 8052-41-3	1 - 5	100 ppm TWA			
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY 64742-82-1	1 - 5	100 ppm			
ISOBUTYL ALCOHOL 78-83-1	1 - 5	50 ppm TWA			
TITANIUM DIOXIDE 13463-67-7	1 - 5	10 mg/m^3 TWA			
ZINC OXIDE 1314-13-2	1 - 5	2 mg/m^3 TWA respirable fraction	10 mg/m^3 STEL respirable fraction		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68ºF (20ºC)
Vapor density (air = 1.0):	5.1
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.65

9. PHYSICAL PROPERTIES

Specific Gravity:	.8
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide. Metal oxide fumes.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-89-8	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY 64742-82-1	1 - 5	> 3160 mg/kg Dermal LD50 Rabbit > 5000 mg/kg Oral LD50 Rat
MINERAL SPIRITS 64742-47-8	1 - 5	> 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
ISOBUTYL ALCOHOL 78-83-1	1 - 5	= 2460 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 6.5 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-48-9	1 - 5	> 3160 mg/kg Dermal LD50 Rabbit > 5000 mg/kg Oral LD50 Rat
TITANIUM DIOXIDE 13463-67-7	1 - 5	> 10000 mg/kg Oral LD50 Rat
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
ZINC OXIDE 1314-13-2	1 - 5	> 5000 mg/kg Oral LD50 Rat
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	1 - 5			Monograph 47 [1989]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
TALC 14807-96-6	1 - 5			male rat-some evidence; female rat-clear evidence; male mice-no evidence; female mice-no evidence
TITANIUM DIOXIDE 13463-67-7	1 - 5			male rat-negative; female rat-negative; male mice-negative; female mice-negative
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	1 - 5	Present		
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S. Highway & Rail Shipments
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35			5000
ISOBUTYL ALCOHOL 78-83-1	1 - 5			5000
ZINC OXIDE 1314-13-2	1 - 5		YES	
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:
Acute: yes
Chronic: yes
Flammability: yes
Reactivity: no
Sudden Pressure: yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

ZINC OXIDE	1314-13-2
TITANIUM DIOXIDE	13463-67-7
TALC	14807-96-6
MINERAL SPIRITS	64742-47-8
NAPHTHA	64742-48-9
NAPHTHA (PETROLEUM), HYDRODESULFURIZED HEAVY	64742-82-1
NAPHTHA	64742-89-8
AROMATIC NAPHTHA, LIGHT	64742-95-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6
ISOBUTYL ALCOHOL	78-83-1
STODDARD SOLVENT	8052-41-3

Additional Non-Hazardous Materials

PROPRIETARY COLOR PIGMENT	Trade Secret
PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	24/Dec/2010
Revision Date:	24/Dec/2010

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if it matters, we're on it.®

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**048.1400038.076**
Product Name:	1400038H1 YELLOW 6UC
Product Use:	Paint product.
Print date:	08/Aug/2011
Revision Date:	08/Aug/2011

Company Identification
The Valspar Corporation
1000 Lake Road
Medina, OH 44256

Manufacturer's Phone:	1-330-725-4511
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- May cause frostbite
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Cardiac arrhythmias
- Kidney injury may occur.
- Blood disorders
- Liver injury may occur.

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
PROPANE 74-98-6	10 - 15	Propane
NAPHTHA 64742-88-7	5 - 10	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
BUTANE 106-97-8	5 - 10	Butane
BUTYL ACETATE 123-86-4	1 - 5	n-Butyl acetate
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide
XYLENE 1330-20-7	1 - 5	Xylenes (o-, m-, p- isomers)
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Chemical goggles, also wear a face shield if splashing hazard exists.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	10 - 15	1000 ppm TWA 1800 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA 710 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m^3 TWA dust total		
XYLENE 1330-20-7	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	10 - 15	1000 ppm TWA			
BUTANE 106-97-8	5 - 10	1000 ppm TWA			
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA	200 ppm STEL		
TITANIUM DIOXIDE 13463-67-7	1 - 5	10 mg/m^3 TWA			

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
XYLENE 1330-20-7	1 - 5	100 ppm TWA	150 ppm STEL		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.82
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide. Metal oxide fumes.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	10 - 15	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
BUTANE 106-97-8	5 - 10	= 658 mg/L Inhalation LC50 Rat 4 h
BUTYL ACETATE 123-86-4	1 - 5	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit

11. TOXICOLOGICAL INFORMATION

TITANIUM DIOXIDE 13463-67-7	1 - 5	> 10000 mg/kg Oral LD50 Rat
XYLENE 1330-20-7	1 - 5	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	1 - 5			Monograph 47 [1989]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	5 - 10			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence
TITANIUM DIOXIDE 13463-67-7	1 - 5			male rat-negative; female rat-negative; male mice-negative; female mice-negative
XYLENE 1330-20-7	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	1 - 5	Present		
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35			5000
BUTYL ACETATE 123-86-4	1 - 5			5000
XYLENE 1330-20-7	1 - 5		form R reporting required for 1.0% de minimis concentration	100

15. REGULATORY INFORMATION

ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTANE	106-97-8
BUTYL ACETATE	123-86-4
XYLENE	1330-20-7
TITANIUM DIOXIDE	13463-67-7
NAPHTHA	64742-88-7
AROMATIC NAPHTHA, LIGHT	64742-95-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6

Additional Non-Hazardous Materials

PROPRIETARY COLOR PIGMENT	Trade Secret
PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product: Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	08/Aug/2011
Revision Date:	08/Aug/2011

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if it matters, we're on it.®

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**048.1400076.076**
Product Name:	1400076H1 NTRL YELLOW
Product Use:	Paint product.
Print date:	30/Dec/2010
Revision Date:	30/Dec/2010

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-332-7371
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation
- Risk of serious damage to eyes.

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- May cause frostbite
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Kidney injury may occur.
- Liver injury may occur.
- Blood disorders
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Teratogens:
- May cause birth defects.
- Female reproductive toxin.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	20 - 25	Propane
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
NAPHTHA 64742-89-8	5 - 10	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
TOLUENE 108-88-3	1 - 5	Toluene
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
Usual industrial work clothes. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	20 - 25	1000 ppm TWA 1800 mg/m^3 TWA		
TOLUENE 108-88-3	1 - 5	200 ppm TWA	= 300 ppm Ceiling	
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m^3 TWA dust total		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	20 - 25	1000 ppm TWA			
TOLUENE 108-88-3	1 - 5	20 ppm TWA			Can be absorbed through the skin.
TITANIUM DIOXIDE 13463-67-7	1 - 5	10 mg/m^3 TWA			
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.35
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	20 - 25	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
NAPHTHA 64742-89-8	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse
TOLUENE 108-88-3	1 - 5	= 12.5 mg/L Inhalation LC50 Rat 4 h = 12124 mg/kg Dermal LD50 Rat = 636 mg/kg Oral LD50 Rat = 8390 mg/kg Dermal LD50 Rabbit > 26700 ppm Inhalation LC50 Rat 1 h
TITANIUM DIOXIDE 13463-67-7	1 - 5	> 10000 mg/kg Oral LD50 Rat
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

May cause birth defects. Female reproductive toxin.

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Developmental Toxicity	California Prop 65 - Reproductive (Male)
TOLUENE 108-88-3	1 - 5	Listed. initial date 1/1/91 - developmental toxicity	

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
TOLUENE 108-88-3	1 - 5	Listed. Initial date 8/1/09 - female reproductive toxicity	
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	1 - 5			Monograph 47 [1989]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	10 - 15			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence
TOLUENE 108-88-3	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
TITANIUM DIOXIDE 13463-67-7	1 - 5			male rat-negative; female rat-negative; male mice-negative; female mice-negative
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	1 - 5	Present		

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S. Highway & Rail Shipments
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40			5000
TOLUENE 108-88-3	1 - 5		form R reporting required for 1.0% de minimis concentration	1000
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:
Acute: yes
Chronic: yes

Flammability:	no
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

TOLUENE	108-88-3	
TITANIUM DIOXIDE	13463-67-7	
NAPHTHA	64742-88-7	
NAPHTHA	64742-89-8	
DIMETHYL KETONE- EXEMPT SOLVENT		67-64-1
PROPANE	74-98-6	

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	30/Dec/2010
Revision Date:	30/Dec/2010

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	ABC Dry Chemical Fire Extinguishant
Synonym:	Multi-purpose Dry Chemical
Manufacturer:	AMEREX CORPORATION
Internet Address:	www.amerex-fire.com
Address:	7595 Gadsden Highway P.O. Box 81 Trussville, AL 35173-0081
Telephone:	(205) 655-3271
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised:	August, 2003

Section 2. Hazard identification and emergency overview

Emergency overview: Light yellow, fine solid powder, odorless.

Adverse health effects and symptoms: Irritating to the respiratory system, eyes and skin. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin. Ingestion, although unlikely, may cause cramps, nausea and diarrhea.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Mono-ammonium phosphate	PNOC** Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	PNOC Total dust, 4 mg/m^3 Respirable fraction, 1.5 mg/m^3
Ammonium sulphate	PNOC Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	PNOC Total dust, 4 mg/m^3 Respirable fraction, 1.5 mg/m^3
Mica	6 mg/m^3	3 mg/m3	NR
Attapulgite clay	PNOC Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	PNOC Total dust, 4 mg/m^3 Respirable fraction, 1.5 mg/m^3
Silicone oil	NR***	NR	NR

Calcium carbonate	PNOC Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	——
Amorphous silica	143 mg/m^3 $\frac{80\ mg/m^3}{\%\ SiO_2}$	10 mg/m^3	4 mg/m^3
Yellow 14 pigment	NR	NR	NR

*German regulatory limits **PNOC = Particulates not otherwise classified (ACGIH) also known as Particulates not otherwise regulated (OSHA) *** NR = Not Regulated. All values are 8 hour time weighted average concentrations.

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system

D2B Product may irritate eyes, skin, or mucous membranes

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Mono-ammonium phosphate and Ammonium sulphate	94	7722-76-1 7783-20-2
Attapulgite clay or Fullers earth magnesium aluminum silicate- contains >1% crystalline silica (quartz)	<3	12174-11-7 14808-60-7
Mica potassium aluminum silicate	1-2	12001-26-2
Silicone oil methyl hydrogen polysiloxane	<1	63148-57-2
Calcium carbonate	<1	1317-65-3
Amorphous silica precipitated synthetic zeolite	<1	112926-00-8
Yellow 14 pigment – di-azo dye	<1	5468-75-7

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station and repeat until pain free. Seek medical attention if irritation develops or persists, or if visual changes occur.

Skin Exposure: In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops or persists.

Inhalation: If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink and do not induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis ("dusty lung" disease).

Section 5. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent.

Unusual fire/explosion hazards: in a fire this material may decompose, releasing oxides of sulfur and carbon (see Section 10).

Insensitive to mechanical impact or static discharge.

HMIS Hazard Ranking:
health = 1, flammability = 0, reactivity = 0, personal protective equipment: ½ mask APR w/HEPA cartridges (see Section 8).

Section 6. Accidental release measures

Clean up released material using vacuum or wet sweep and shovel to minimize generation of dust. Wear appropriate respiratory protection. Bag and drum for disposal. If product is used and/or contaminated, use PPE and containment appropriate to the nature of the mixture. Prevent material from entering waterways.

Section 7. Handling and storage

Avoid skin, eye, or respiratory exposure. Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8). Keep product in original container or extinguisher. Contents may be under pressure – inspect for extinguisher rust periodically to insure container integrity. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a dust mask or air purifying respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use N95 dust mask or air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters.

Eye protection: wear chemical goggles.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. Physical and chemical properties

Appearance: yellow powder, finely divided odorless solid.
Specific gravity: ~ 1.85
Solubility: not soluble in water
Non –flammable
Flash point: none
Vapor pressure: < 1 mm Hg
pH: approximately 4-5
Boiling point: not applicable

No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong alkalis (bases), magnesium, strong oxidizers such as calcium hypochlorite (pool chlorine) and isocyanuric acids.

Decomposition products: heat of fire may release carbon monoxide, carbon dioxide, and sulfur dioxide. Oxides of phosphorous and ammonia reported.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Mono ammonium phosphate LD_{50} (rat): > 1000mg/kg body weight
Ammonium sulfate LD_{50} (rat): 2840 mg/kg body weight
Target organs in man: respiratory system, eyes, skin. This product is an irritant to epithelial tissue, and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Chronic toxicity: Pneumoconiosis, or "dusty lung" disease, may result from chronic exposure to any dust.

Reproductive toxicity: This product's ingredients are not known to have reproductive or teratogenic effects.

Section 12. Ecological information

Ecotoxicity: negative effects unknown. Provides nutrient nitrogen and phosphorus to plant life.

Persistence/ Degradability: degrades rapidly in humid/wet environment.

Bioaccummulation: extent unknown.

Mobility in soil: slow evaporation rate; water soluble, may leach to groundwater.

Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

Section 14. Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT or Transport Canada "Transportation of Dangerous Goods" regulations.

Section 15. Regulatory information

International Inventory Status:

All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	Yes
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	KECL	Yes

European Risk and Safety phrases:

EU Classification:	Harmful.	
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with

		plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Components:

Mono ammonium phosphate:

EU Classification:	Harmful.	
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Ammonium sulfate:

EU Classification:	Irritant	
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

U.S. federal regulatory information:

None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs), or are regulated under TSCA 8(d).

State regulatory information:

Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: Mica Dust, Ammonium Sulfate
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: Mica Dust, Ammonium Sulfate
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: Mica Dust, Ammonium Sulfate

Texas – Hazardous Substance List: No
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65: No component is listed on the California Proposition 65 list.

Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Lindsay R. Hill, CIH

MIDSUN GROUP™

P.O. Box 864 • 135 Redstone Street
Southington, CT 06489 U.S.A

Toll Free: (800)-4-midsun (U.S.A. only)
(860) 378-0100 • (860) 378-0103 (Fax)
www.midsungroup.com

Acetone Material Safety Data Sheet (MSDS)

MANUFACTURER'S CONTACT INFORMATION:

Sunoco, Inc. (R&M)
1735 Market Street LL
Philadelphia, Pennsylvania 19103-7583

EMERGENCY
Sunoco: (800) 964-8861
Chemtrec: (800) 424-9300
Product Safety: (610) 859-1120

I. Product Identification	
Trade Name	Acetone
Product Use	Chemical Intermediate

II. Hazardous Ingredients of Material			
Components	**Amount (Vol. %)**	**CAS No.**	**ACGIH TLV**
Acetone	100	67-64-1	--
Exposure Limits (See Section VI for additional Exposure Limits)			
Governing Body	**CAS No.**		**Exposure Limits**
ACGIH	67-64-1		STEL 750 ppm
ACGIH	67-64-1		TWA 500 ppm
OSHA	67-64-1		TWA 1,000 ppm

Emergency Overview:
Danger! Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. Harmful if inhaled. Vapor concentrations may cause drowsiness. Causes skin and eye irritation. Harmful if swallowed. May cause target organ or system damage to the following: Eye, skin, respiratory system, central nervous system.

HAZARD RATINGS

Key: 0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme

	Health	Fire	Reactivity	PPI
NFPA	1	3	0	
HMIS	1	3	0	X

III. Physical/Chemical Data	
Appearance & Odor	Colorless liquid
Boiling Point	133° F
Melting Point	-137.2° F
Specific Gravity	0.79
Molecular Weight g/mole	58.08
pH	7
Odor	Sweet, pungent
Odor Threshold	62 ppm
Vapor Pressure (mm Hg @20° C)	181
Solubility in Water	Complete
Volatile (wt %)	100%

Acetone Material Safety Data Sheet (MSDS)

IV. Fire and Explosion Data	
Flash Point	1.4
Flammable Limits in Air (% By Volume)	
Lower	2.5%
Upper	12.8%
Auto Ignition Temperature	869° F
Unusual Fire & Explosion Hazards	Use water spray. Use water spray to cool fire exposed tanks and containers. Acetone/water solutions that contain more than 2.5% acetone have flash points. When the acetone concentration is greater than 8% (by weight) in a closed container, it would be within flammable range and cause fire or explosion if a source of ignition were introduced.
Fire Extinguishing Media	Water spray, alcohol resistant foam, dry chemical or carbon dioxide.

V. Reactivity Data	
Stability	Stable
Conditions to Avoid	Avoid heat, sparks and open flame.
Incompatibility	Acetone may form explosive mixtures with chromic anhydride, chromyl alcohol, hexacholromelamine, hydrogen peroxide, permonosulfuric acid, potassium terbutoxide and thioglycol. Strong oxidizers.
Hazardous Decomposition	May produce carbon dioxide, carbon monoxide and other asphyxiants.
Hazardous Polymerization	Will not occur.

VI. Health Hazard and Toxicological Data	
Pre-existing Medical Conditions: The following diseases or disorders may be aggravated by exposure to this product. Skin, eye, lung (asthma-like conditions).	
Chronic Exposure	**Effects of Exposure**
Eyes	Contact with the eye may cause moderate to severe irritation.
Skin	Moderately irritating to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). LD50 mg/kg Rabbit, 20,000 Draize Skin Score: no data Out of 8.0
Inhalation	High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headache, paralysis and loss of consciousness and even death).High vapor concentrations are irritating to the eyes, nose, throat and lungs. LC50 (mg/1) no data LC50 (mg/m^3) Rat 8 hrs. 50,000 LC50 (ppm) no data
Ingestion	Product may be harmful or fatal if swallowed. Pulmonary aspiration hazard. After ingestion, may enter lungs and produce damage. May produce central nervous system effects, which may include dizziness, loss of balance and coordination, unconsciousness, coma and even death. LD50 (g/kg) Rat 5.8

Acetone Material Safety Data Sheet (MSDS)

VII. First Aid Procedures	
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Get immediate medical attention.
Eye Contact	Flush eye(s) with water for 15 minutes. Get medical attention.
Skin Contact	Immediately flush skin with plenty of water. Remove clothing. Get medical attention immediately. Wash clothes separately before reuse.
Ingestion	If swallowed, DO NOT INDUCE VOMITING. Give victim a glass of water or milk. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Get medical attention immediately. See Section X for additional first aid information.

VIII. Preventive Measures Consult with a Health and Safety Professional for Specific Selections	
A. PERSONAL PROTECTIVE EQUIPMENT	
Respiratory Protection	Concentrations in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Half-mask air purifying respirator with organic vapor cartridges is acceptable for exposure to ten (10) times the exposure limit. Full-face air purifying respirator with organic vapor cartridges is acceptable for exposures to fifty (50) times the exposure limit. Exposure should not exceed the cartridge limit of 1000 ppm. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures greater than fifty (50) times the exposure limit. If exposure is above the IDLH (Immediately Dangerous to Life and Health) or there is a possibility of an uncontrolled release, or exposure levels are unknown, then use a positive pressure-demand full-face air respirator with escape bottle or SCBA. Wear a NIOSH-approved (or equivalent) full-face piece airline respirator in the positive pressure mode with emergency escape provisions.
Eye/Face Protection	Splash proof chemical goggles or full-face shield recommended to protect against splash of product.
Clothing/Gloves	The glove(s) list below may provide protection against permeation. Gloves or other chemically resistant materials may not provide adequate protection. Protective gloves are recommended to protect against contact with product. Neoprene, Natural rubber.
Engineering Controls	Use with adequate ventilation. Ventilation is normally required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Use explosion-proof ventilation equipment.
Other	The following materials are acceptable for use as protective clothing; Neoprene, Natural rubber. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Remove contaminated clothing and wash before reuse.
B. STORAGE AND HANDLING	
Storage Conditions	Keep away from heat, sparks and flame. Store in a cool, dry place. Keep container closed when not in use.
Handling Procedure	Use only in a well-ventilated area. Ground and bond containers when transferring material. Avoid breathing (dust, vapor, mist, gas). Avoid contact with this material. Wash thoroughly after handling. Do not use air pressure to unload containers.

Continued on Next Page

Acetone Material Safety Data Sheet (MSDS)

VIII. Preventive Measures (Continued)	
C. ENVIRONMENTAL PROTECTION	
Spill and Leak Procedure	Prevent ignition, stop leak and ventilate the area. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Use appropriate personal protective equipment as stated in Section VIII of this MSDS. Advise the Environmental Protection Agency (EPA) and appropriate state agencies, if required. U.S. regulations require reporting spills of this material could that reach any surface waters. The toll-free number for the U.S. Coast Guard National Response Center is (800) 424-8802. After removal, flush contaminated area thoroughly with water.
Waste Disposal	Follow federal, state and local regulations. In Canada, follow federal, provincial and local regulations. This material is a RCRA hazardous waste. DO NOT flush material to drain or storm sewer. Contract to authorized disposal service.
Ecological Information	This product is not expected to persist in the environment.
D. TRANSPORTATION INFORMATION	
Governing Body	U.S. DOT
Proper Shipping Name	Acetone
Mode	Ground
Hazard Class	3 (Flammable Liquid)
UN/NA Number	UN1090

IX. Regulatory Information/Classifications		
Regulatory List	**Component**	**CAS Number**
ACGIH -- Occupational Exposure Limits -- Carcinogens	Acetone	67-64-1
ACGIH – Occupational Exposure Limits – TWAs	Acetone	67-64-1
ACGIH – Short Term Exposure Limits	Acetone	67-64-1
CAA (Clean Air Act) -- HON Rule – SOCMI Chemicals	Acetone	67-64-1
Canada -- WHMIS – Ingredient Disclosure	Acetone	67-64-1
CERCLA/SARA -- Hazardous Substances and their RQs	Acetone	67-64-1
CERCLA/SARA -- Hazardous Substances and their RQs	Acetone	67-64-1
CERCLA/SARA – Hazardous Substances and their RQs	Acetone	67-64-1
Inventory -- Australia – (AICS)	Acetone	67-64-1
Inventory -- Canada – Domestic Substances List	Acetone	67-64-1
Inventory -- China	Acetone	67-64-1
Inventory -- European – EINECS Inventory	Acetone	67-64-1
Inventory – Japan -- (ENCS)	Acetone	67-64-1
Inventory – Korea – Existing and Evaluated	Acetone	67-64-1
Inventory – Philippines -- (PICCS)	Acetone	67-64-1
Inventory -- TSCA -- Section 8(b) Inventory	Acetone	67-64-1
Massachusetts – Right to Know List	Acetone	67-64-1
New Jersey – Department of Health RTK List	Acetone	67-64-1
New Jersey -- Special Hazardous Substances	Acetone	67-64-1
OSHA -- Final PELs – Time Weighed Averages	Acetone	67-64-1
Pennsylvania – Right to Know List	Acetone	67-64-1
TSCA – Section 12(b) -- Export Notification	Acetone	67-64-1
TSCA -- Section 4 -- Chemical Test Rules	Acetone	67-64-1

Continued on Next Page

Acetone Material Safety Data Sheet (MSDS)

IX. Regulatory Information/Classifications - Continued

Regulatory Information/Classifications Title III, Sections 311, 312

Acute	Chronic	Fire	Reactivity	Sudden Release of Pressure
YES	NO	YES	NO	NO

X. Other Information

If swallowed, acetone should be removed by emesis and/or gastric lavage. Mechanical assisted ventilation may be necessary. In severe cases, an initial period of hypoglycemia may require correction by intravenous solutions of dextrose. In some cases, an initial period of hyperglycemia has occurred during the recovery phase and has lasted for a few days. Treatment with insulin may be beneficial but should be used cautiously. Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity or other sources of ignition. They may explode and cause injury or death. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner or properly disposed of. This product is subject to the Chemical Division and Trafficking Act of 1988 and subject to specific record keeping requirements. WHMIS Classification: Class B, Division 2 – Flammable Liquids.

MATERIAL SAFETY DATA SHEET

SECTION 1: IDENTIFICATION

Product identifier : **AIR BRAKE ANTIFREEZE**

Product Use : Prevention of frozen lines, and corrosion of metals, in heavy duty air brake systems.

Chemical Family : Alcohol

Manufacturer part no. : M2832, M2834, M2832C, M2832/6C, M2834C

Supplier's name and address:

Radiator Specialty Co., of Canada
1711 Aimco Blvd.
Mississauga, ON, Canada
L4W 1H7

Manufacturer's name and address:

Refer to Supplier

Information Telephone # : (905) 625-9117 (Mon. - Fri., 8 AM - 4 PM)

24 Hr. Emergency Tel # : 613-996-6666 (CANUTEC)

SECTION 2 - HAZARDS IDENTIFICATION

Classification : WHMIS information: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Canadian Controlled Products Regulations (CPR). WHMIS classification:

Class B2 (Flammable Liquids);
Class D1B (Materials Causing Immediate and Serious Toxic Effects, Toxic Material);
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

Labelling: Phrases recommended to appear on a supplier label, can be found in Section 15. WHMIS symbols required on a supplier label:

Emergency Overview : Clear, colorless liquid. Mild alcohol odour.
DANGER! Flammable liquid and vapour. Vapour may cause flash fire! Burns with colourless flame. POISON! May be fatal or cause blindness if swallowed in sufficient quantities. Harmful by inhalation and in contact with skin. May cause nausea, vomiting, headache and other central nervous system effects. Causes eye irritation. May cause respiratory irritation. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. Prolonged or repeated contact with skin may cause irritation in some cases. May be an aspiration hazard. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

POTENTIAL HEALTH EFFECTS:

Signs and symptoms of short-term (acute) exposure

Inhalation : May cause irritation to the nose, throat and upper respiratory tract. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness.

Skin : Direct skin contact may result in little or no irritation. May be absorbed and cause symptoms similar to those for inhalation.

Eyes : May cause mild to moderate irritation. May cause burning sensation, redness and tearing (watering).

Ingestion : May cause blindness if swallowed - cannot be made non-poisonous. May cause irritation of mouth, throat, and stomach. Symptoms may include pain, headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. May result in unconsciousness and possibly death. May be an aspiration hazard. Aspiration into the lungs during swallowing or subsequent vomiting may cause chemical pneumonitis, which can be fatal.

Effects of long-term (chronic) exposure : Prolonged or repeated contact may cause drying, cracking and defatting of the skin.

Carcinogenic status : See TOXICOLOGICAL INFORMATION, Section 11.

Additional health hazards : May cause birth defects. See TOXICOLOGICAL INFORMATION, Section 11.

Potential environmental effects

: See ECOLOGICAL INFORMATION, Section 12.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	Wt.%
Methyl alcohol (Methanol)	67-56-1	60.00 - 100.00

SECTION 4 - FIRST AID MEASURES

Inhalation : Immediately remove person to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention.

Skin contact : Remove/Take off immediately all contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention/advice.

Ingestion : Seek immediate medical attention/advice. Do not induce vomiting, unless directed to do so by qualified medical personnel. Never give anything by mouth to an unconscious person.

Notes For Physician : Immediate medical attention is required. Contains methanol. Administration of ethanol can slow the metabolism of methanol, thus reducing the potential for harmful effects.

SECTION 5 - FIRE FIGHTING MEASURES

Fire hazards/conditions of flammability

: Flammable liquid and vapour. Burns with colourless flame. Will ignite when exposed to heat, flame and other sources of ignition. Vapours are heavier than air and collect in confined and low-lying areas. Vapour can travel to ignition source and flash back. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Oxidizing properties : None known.

Explosion data: Sensitivity to mechanical impact / static discharge

: Not expected to be sensitive to mechanical impact. May be sensitive to static discharge. Vapours in the flammable range may be ignited by a static discharge of sufficient energy.

Suitable extinguishing media : Dry chemical, foam, carbon dioxide and water fog. Water may be ineffective because it may not cool product below the flashpoint.

Special fire-fighting procedures/equipment

: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame.

Hazardous combustion products

: Carbon oxides; formaldehyde; Other unidentified organic compounds.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up.

Environmental precautions : Ensure spilled product does not enter drains, sewers, waterways, or confined spaces. For large spills, dike the area to prevent spreading.

Spill response/cleanup : Ventilate area of release. Remove all sources of ignition. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand), then place absorbent material into a container for later disposal (see Section 13). Notify the appropriate authorities as required.

Prohibited materials : Do not use combustible absorbents, such as sawdust.

SECTION 7 - HANDLING AND STORAGE

Safe Handling procedures	:	Use in a well-ventilated area. Wear suitable protective equipment during handling. Do not ingest. Avoid breathing vapour or mist. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Use proper bonding and grounding techniques when transferring liquid. Avoid contact with incompatible materials. Wash thoroughly after handling.
Storage requirements	:	Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area.
Incompatible materials	:	Strong oxidizing agents; Acids; Reactive metals; Alkali metals; Isocyanates.
Special packaging materials	:	Always keep in containers made of the same materials as the supply container.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Ingredients	ACGIH TLV		OSHA PEL	
	TWA	STEL	PEL	STEL
Methyl alcohol (Methanol)	200 ppm (skin)	250 ppm (skin)	200 ppm	N/Av

Ventilation and engineering measures : Use general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

Respiratory protection : If the TLV is exceeded, a NIOSH/MSHA-approved respirator is advised. Advice should be sought from respiratory protection specialists. A respiratory protection program that meets CSA Z94.4-02 requirements must be followed whenever workplace conditions warrant use of a respirator.

Skin protection : Wear impervious gloves, such as butyl rubber. Advice should be sought from glove suppliers. The following glove material(s) are not recommended: Natural Rubber; Neoprene; Nitrile rubber; Polyethylene; polyvinyl alcohol; Polyvinylchloride.

Eye / face protection : Chemical splash goggles are recommended. A full face shield may also be necessary. Refer to CSA Z94.3 or other appropriate standards.

Other protective equipment : Wear resistant clothing and boots. Other equipment may be required depending on workplace standards. An eyewash station and safety shower should be made available in the immediate working area.

General hygiene considerations : Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid	Appearance	: colourless
Odour	: Alcohol	Odour threshold	: N/Av
pH	: N/Av		
Boiling point	: 64.6°C	Specific gravity	: 0.7925 @ 20°C
Melting/Freezing point	: - 97.8°C	Coefficient of water/oil distribution	: N/Av
Vapour pressure (mmHg @ 20° C / 68° F)	: 96	Solubility in water	: soluble
Vapour density (Air = 1)	: 1.11	Evaporation rate (n-Butyl acetate = 1)	: 2.0
Volatile organic Compounds (VOC's)	: N/Av	Volatiles (% by weight)	: 100%
Flash point	: 12°C		
Flash point Method	: Tag closed cup	Auto-ignition temperature	: N/Av
Lower flammable limit (% by vol.)	: 5.5%	Upper flammable limit (% by vol.)	: 36.5%
Flame Projection Length	: N/Ap	Flashback observed	: N/Ap

Absolute pressure of container : N/Ap

Viscosity : N/Av

General Informatioln : No additional information.

Section 10: STABILITY AND REACTIVITY

Stability and reactivity : Stable under the recommended storage and handling conditions prescribed.

Hazardous polymerization : Hazardous polymerization does not occur.

Conditions to avoid : Avoid heat and open flame. Keep away from direct sunlight. Ensure adequate ventilation, especially in confined areas.

Materials To Avoid And Incompatibility : Strong oxidizing agents; Acids; Reactive metals; Alkali metals; Isocyanates.

Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11 - TOXICOLOGICAL INFORMATION

Target organs : Eyes, skin, respiratory system, digestive system, central nervous system.

Routes of exposure : *Inhalation:* YES *Skin Absorption:* YES *Skin & Eyes:* YES *Ingestion:* YES

Irritancy : Moderate eye irritant. Mild skin irritant.

Toxicological data : See below for toxicological data on the substance.

Ingredients	LC_{50}(4hr) inh, rat	LD_{50} (Oral, rat)	LD_{50} (Rabbit, dermal)
Methyl alcohol (Methanol)	64 000 ppm (83.8 mg/L)	5628 mg/kg Note: The estimated minimum toxic oral dose to humans is 300 - 1000 mg/kg.	15 800 mg/kg

Carcinogenic status : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Reproductive effects : Not expected to cause reproductive effects.

Teratogenicity : Contains methanol, which may cause teratogenic effects at doses which are not maternally toxic.

Mutagenicity : Not expected to be mutagenic in humans.

Epidemiology : Not available.

Sensitization to material : Not expected to be a skin or respiratory sensitizer.

Synergistic materials : Methanol can increase the toxicity of other liver toxins (e.g. Carbon tetrachloride).

other important hazards : Causes central nervous system depression.

Conditions aggravated by overexposure : Pre-existing skin, eye, respiratory and central nervous system disorders.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

Ingredients	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Methyl alcohol (Methanol)	67-56-1	28 100 mg/L (Fathead minnow)	N/Av	None.

Ingredients	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Methyl alcohol (Methanol)	67-56-1	> 10 000 mg/L	N/Av	None.

Ingredients	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Methyl alcohol (Methanol)	67-56-1	N/Av	N/Av	None.

Mobility : No data is available on the product itself.

Persistence : Methanol is readily biodegradable.

Bioaccumulation potential : The log Kow value for Methanol is - 0.77, and its Bioconcentration factor (BCF) is < 10.

Other Adverse Environmental effects

: No data is available on the product itself.

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapour) and can be dangerous. Do not cut, weld, drill or grind on or near this container.

Methods of Disposal : Dispose of in accordance with federal, provincial and local hazardous waste laws.

SECTION 14: TRANPORT INFORMATION

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN1230	METHANOL	3(6.1)	II	
TDG Additional information	Document as Class 3 (6.1). May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.				

SECTION 15 - REGULATORY INFORMATION

Labelling:

Danger. Flammable liquid and vapour May cause flash fire. POISON! May be fatal or cause blindness if swallowed, cannot be made non-poisonous. Harmful by inhalation and in contact with skin. May cause nausea, vomiting, headache and other central nervous system effects. May cause respiratory irritation. Affected person could experience a latent period of no symptoms, followed by blurred vision and possibly blindness. Causes eye irritation. May be an aspiration hazard. Aspiration into lungs may be fatal. Possible birth defect hazard - contains material that may cause birth defects, based on animal data.

Precautions: Use in a well-ventilated area. Wear chemically resistant protective equipment during handling. Do not ingest. Avoid breathing vapours. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks, and open flames. Ground all equipment during handling. Avoid contact with incompatible materials. Wash thoroughly after handling. Store in a cool, dry, well ventilated area, away from heat and ignition sources.

FIRST AID: If inhaled, move to fresh air. If breathing stopped, begin artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention. For skin contact, flush with water for at least 15 minutes, while removing contaminated clothing. Get medical attention. For eye contact, flush with running water for at least 15 minutes. Get medical attention. If INGESTED call nearest Poison Control Centre or physician immediately. Do not induce vomiting unless instructed by medical personnel. Never give anything by mouth to an unconscious person.

Refer To Material Safety Data Sheet for further information.

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

US Federal Information:

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

SECTION 16 - OTHER INFORMATION

Legend : ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CSA: Canadian Standards Association
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
Inh: Inhalation
LC: Lethal Concentration
LD: Lethal Dose
MSHA: Mine Safety and Health Administration
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RTECS: Registry of Toxic Effects of Chemical Substances
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2013.
2. International Agency for Research on Cancer Monographs, searched 2013.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2013 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2013.

Prepared for: Radiator Specialty Co. of Canada 1711 Aimco Blvd. Mississauga, ON, Canada, L4W 1H7 Telephone: 905-625-9117 (Mon. - Fri., 8 AM - 4 PM) Please direct all enquiries to Radiator Specialty.	
Prepared by: ICC The Compliance Center Inc. http://www.thecompliancecenter.com	ICC ComplianceCenter

DISCLAIMER OF LIABILITY

This Material Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by Radiator Specialty Co. of Canada and CCOHS' Web Information Service. The information in the Material Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc and Radiator Specialty Co. of Canada expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this MSDS does not apply to use with any other product or in any other process.

This Material Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Radiator Specialty Co. of Canada.

MSDS Preparation Date (mm/dd/yyyy)

: 08/01/2007

MSDS Revision Date (mm/dd/yyyy)

: 08/15/2013

Revision No. : 3

Revision Information : (M)SDS sections updated:
7. HANDLING AND STORAGE (Incompatible materials);
8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Skin protection);
11. TOXICOLOGICAL INFORMATION (Toxicological data);
12. ECOLOGICAL INFORMATION.

END OF DOCUMENT

ANSUL

MATERIAL SAFETY DATA SHEET

ANSULEX Low pH Liquid Fire Suppressant

Product Code: 1070-2-000 ANa

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	ANSULEX Low pH Liquid Fire Suppressant
Version #	01
Revision date	01-08-2014
Product Code	1070-2-000 ANa
Product use	Fire exintinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	Health injuries are not known or expected under normal use.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	May cause minor irritation on eye contact.
Skin	Non-irritating to the skin.
Inhalation	None known.
Ingestion	Not a likely route of entry.

3. Composition / Information on Ingredients

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

4. First Aid Measures

First aid procedures	
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Skin contact	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Specific methods	None known.
Hazardous combustion products	May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use water spray to reduce vapors or divert vapor cloud drift.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Avoid release to the environment. Handle and open container with care.
Storage	Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment	
Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Yellow green
Odor	Mild.
Physical state	Liquid.
pH	7.7 - 8.7
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.33
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Incompatible materials	None known.
Hazardous decomposition products	Toxic gas. Nitrogen oxides (NOx).

11. Toxicological Information

Toxicological information	The toxicity of this product has not been tested.
Chronic effects	Not available.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Not available.
Epidemiology	Not available.
Neurological effects	Not available.

12. Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 0
Flammability: 0
Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date 01-08-2014

ANSUL

MATERIAL SAFETY DATA SHEET

ANSULITE 1% AFFF

Product Code: 1010-2-023-ANa

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	ANSULITE 1% AFFF
Version #	02
Revision date	01-08-2014
CAS #	Mixture
Product Code	1010-2-023-ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING! Causes skin and eye irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Do not get this material in contact with eyes.
Skin	Avoid contact with the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Do not breathe vapor. May be irritating.
Ingestion	Not a likely route of entry. Do not ingest.
Target organs	Eyes. RESPIRATORY SYSTEM. Skin. Central nervous system.
Chronic effects	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Irritation of nose and throat. Irritation of eyes and mucous membranes. Defatting of the skin. Rash. Skin irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Butyl Carbitol	112-34-5	20 - 40
Other components below reportable levels		60 - 80

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.

General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Specific methods	In the event of fire, cool tanks with water spray.
Hazardous combustion products	May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.
Storage	Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment	
Eye / face protection	Do not get in eyes. Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.
Skin protection	Wear appropriate chemical resistant clothing. Chemical resistant gloves.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	When using do not smoke. Avoid contact with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Light yellow. Clear.
Odor	Mild. Sweet.
Physical state	Liquid.
pH	6.5 - 8.5
Melting point	-74.2 °F (-59.1851 °C) estimated
Freezing point	Not available.
Boiling point	203 °F (95 °C)

Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.05
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Alkaline metals. Strong acids, alkalies and oxidizing agents.
Hazardous decomposition products	Nitrogen oxides (NOx). Sulfur oxides. Carbon oxides.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components	Test Results
Butyl Carbitol (112-34-5)	Acute Dermal LD50 Rabbit: 2700 mg/kg
	Acute Oral LD50 Guinea pig: 2000 mg/kg
	Acute Oral LD50 Rabbit: 2200 mg/kg
	Acute Oral LD50 Rat: 6560 mg/kg
	Acute Other LD50 Mouse: 850 mg/kg
	Acute Other LD50 Rat: 500 mg/kg

Local effects	Components of the product may be absorbed into the body through the skin. Contact may irritate or burn eyes.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Butyl Carbitol (112-34-5)	EC50 Algae: > 100 mg/l 96.00 Hours
	EC50 Water flea (Daphnia magna): 3184 mg/l 24.00 hours
	LC50 Bluegill (Lepomis macrochirus): 1300 mg/l 96.00 hours

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Butyl Carbitol (CAS 112-34-5)	1.0 % N230

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Butyl Carbitol (CAS 112-34-5)	Listed. N230

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - Yes Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

Butyl Carbitol (CAS 112-34-5)	500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Butyl Carbitol (CAS 112-34-5)	Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	01-08-2014

Material Safety Data Sheet

Date Prepared/Revised: 4/16/2014 Version no.: 03 Supersedes: (10/22/2013)

1.) Identification of the Mixture and of the Company

Product identifier: **Any-Way Enamel 157-381 Bulk**

Product name:
Any-Way Enamel Bulk

157 J.D. Green	306 Safety Black	320 Forest Green
167 Cat. Yellow - Old	307 Safety White	322 Equipment Orange
168 Cat. Yellow - New	308 Brite Red	333 Dk. Gray (ANSI-33)
178 School Bus Yellow	309 Aluminium	342 Semi-Flat Black
300 Safety Purple	311 gold	344 Satin Black
301 Safety Red	313 Flat White	348 Meter Green
302 Safety Yellow	314 Brown	349 Meter Gray(ANSI-49)
303 Safety Blue	317 Tan	361 Lt. Gray (ANSI-61)
304 Safety Green	318 Light Blue	381 Almond
305 Safety Orange	319 Royal Blue	

Relevant identified uses of the substance: Use on metal, wood, plastic, and other common surfaces including nonporous plaster.
Uses advised against: Not recommended for water immersion services.

CAS No.:	**Not Applicable (mixture)**
Manufacturer/Supplier:	**Aervoe Industries Incorporated**
Street address/P.O. Box:	**1100 Mark Circle**
Country ID/Postcode/Place	**Gardnerville, Nevada 89410**
Telephone number:	**001 (0) 1-775-782-0100**
e-mail:	**mailbox@aervoe.com**
National contact:	**Aervoe industries Incorporated**
For Product Information:	**001 (0) 1-800-227-0196**
Emergency telephone number:	**001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs)**
	English Language Service

2. Hazards identification

This product does not meet the criteria for classification according to Directive 1999/45/EC
Potential health effects: **See Section 11**
Primary routes of entry: **Inhalation, Skin, Eyes, Ingestion**

3. Composition / Information on Ingredients

Material	CAS Number	EINECS Number	Weight Percent	Risk and Safety Phrases	Notes
Acetone	67-64-1	200-662-2	5-10%	R11, R36, R66, R67, S2, S9, S16, S26	
Aliphatic Hydrocarbon	8052-41-3	203-745-1	15-40%	R11, R66, S2, S16, S23, S25, S29, S33	

For full text of R&S- phrases: see section 16.

R Code Summation: R11, R36, R66, R67
S Code Summation: S2, S9, S16, S23, S25, S29, S33

4.) First Aid Measures

General Advice:	If symptoms persist, always call a doctor.
Inhalation First Aid:	Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
Skin Contact First Aid:	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
Eye Contact First Aid:	If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
Ingestion First Aid:	If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire Fighting Measures

Flammable Properties:	Flammable Liquid
Flash Point:	<32F° (0° C)°
Auto Ignition Temperature:	Not Available
Flammable Limits in Air:	
% by Volume:	LEL: 0.7% UEL: 7%
Suitable extinguishing media:	Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media:	None known
Special hazards arising from the substance or mixture:	None known
Hazardous combustion products:	Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards:	Closed Containers may rupture due to the buildup of pressure from extreme temperatures.

Advice for fire-fighters: Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:

1) Follow personal protective equipment recommendations found in section 8.
2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:
1.) Evacuate unprotected personnel from the area.
2.) Remove sources of ignition if safe to do so.
3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
4.) Contain spill to prevent material from entering sewage or ground water systems.
5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Flammable liquid, use in a well ventilated area.
Do not use near sources of ignition.
Store out of direct sunlight.
Storage Temperature: 32° to 120°F (0° to 49°C)
Do not to eat, drink and smoke while working with this material.
Wash hands after use.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:
Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
Keep away from sources of ignition.
Take precautionary measures against static discharge.

Personal Protection:
Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection
Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:
Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	TWA	STEL
Acetone	67-64-1	500	750
Aliphatic Hydrocarbon	8032-32-4	N/AV	N/AV

9. Information on Basic Physical and Chemical Properties

Appearance: Opaque Liquid	Odor: Ketone Odor
Odor Threshold: N/AV	pH: Not Applicale (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV

Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <32F° (0° C)°	Evaporation Rate: Faster Than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	Upper LEL: 0.7% Lower LEL: 7%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions
Conditions to avoid: Heat and ignition sources
Incompatible materials: Strong Oxidizing Agents
Hazardous decomposition products: Will not occur

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

12. Ecological Information

Toxicity: **No Data Available**
Persistence and degradability: **No Data Available**
Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.
Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant

UN1263	PAINT	3	PGII	NO

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant
UN1263	PAINT	3	PGII	NO

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant
UN1263	PAINT	3	PGII	NO

Special Provisions
DOT = Reference 49 CFR
IMDG = Reference International Maritime Dangerous Goods Code
IATA = Reference ICAO or IATA Code

15. Regulatory Information

Workplace classification:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.
SARA Title 3:
Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.
TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.
PROP 65 (CA): Warning: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

List of relevant Risk and Safety phrases:

R Phrases:
R11: Highly flammable
R36: Irritating to eyes
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapours may cause drowsiness and dizziness

S Phrases:
S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place
S16: Keep away from sources of ignition - No smoking
S23: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)

S29: Do not empty into drains
S33: Take precautionary measures against static discharges

National Fire Protection Association (NFPA) ratings
Health = 2 Flammability = 4 Reactivity = 1

This SDS has been completed in accordance with Regulation (EC) No. 1907/2006

Date of Preparation/Revision: 4/16/2014
Supersedes: (10/22/2013)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

Material Safety Data Sheet

Date Prepared/Revised: 3/12/2013 Version no.: 02 Supersedes: (11/30/2010)

1.) Identification of the Mixture and of the Company

Product identifier: **Aervoe Any-Way Spray Paint - Aerosol**

Product name:
Any-Way Spray Paint

157 J.D. Green	306 Safety Black	320 Forest Green
167 Cat. Yellow - Old	307 Safety White	322 Equipment Orange
168 Cat. Yellow - New	308 Brite Red	333 Dk. Gray (ANSI-33)
178 School Bus Yellow	312 Flat Black	342 Semi-Flat Black
300 Safety Purple	313 Flat White	344 Satin Black
301 Safety Red	314 Brown	348 Meter Green
302 Safety Yellow	317 Tan	349 Meter Gray(ANSI-49)
303 Safety Blue	318 Light Blue	361 Lt. Gray (ANSI-61)
304 Safety Green	319 Royal Blue	381 Almond
305 Safety Orange	320 Forest Green	

Relevant identified uses of the substance: Use on metal, wood, plastic, and other common surfaces including nonporous plaster.
Uses advised against: Not recommended for water immersion services.

CAS No.:	**Not Applicable (mixture)**
Manufacturer/Supplier:	**Aervoe Industries Incorporated**
Street address/P.O. Box:	**1100 Mark Circle**
Country ID/Postcode/Place	**Gardnerville, Nevada 89410**
Telephone number:	**001 (0) 1-775-782-0100**
e-mail:	**mailbox@aervoe.com**
National contact:	**Aervoe industries Incorporated**
For Product Information:	**001 (0) 1-800-227-0196**
Emergency telephone number:	**001 (0) 1-800-424-9300 (CHEMTREC -- 24 hrs)**
	English Language Service

2. Hazards identification

This product does not meet the criteria for classification according to Directive 1999/45/EC
Potential health effects: **See Section 11**
Primary routes of entry: **Inhalation, Skin, Eyes, Ingestion**

3. Composition / Information on Ingredients

Material	CAS Number	EINECS Number	Weight Percent	Risk and Safety Phrases	Notes
Hydrocarbon Propellant	68476-86-8	270-705-8	10-30%	R12, R45, R46, S45, S53	
Aliphatic Petroleum Distillates	64742-89-8	265-192-2	10-30%	R45, R46, R65, S45, S53	
Aliphatic Hydrocarbon	8032-32-4	N/AV	5-10%	N/AV	
Dipropylene Glycol Methyl	34590-94-8	352-104-2	1-5%	N/AV	

Ether					
Acetone	67-64-1	200-662-2	15-40%	R11, R36, R66, R67, S2, S9, S16, S26	
307, 312 and 313 Also Contain					
Aliphatic Hydrocarbon	8052-41-3	203-745-1	1-5%	R11, R66, S2, S16, S23, S25, S29, S33	

For full text of R&S- phrases: see section 16.

R Code Summation: R11, R12, R20, R36, R37, R53, R65, R66, R67
S Code Summation: S2, S9, S16, S23, S25, S29, S33, S61, S62

4.) First Aid Measures

General Advice: If symptoms persist, always call a doctor.
Inhalation First Aid: Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
Skin Contact First Aid: Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
Eye Contact First Aid: If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
Ingestion First Aid: If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire Fighting Measures

Flammable Properties: Aerosol
Flash Point: <0° C (-18° F)
Auto Ignition Temperature: Not Available
Flammable Limits in Air:
% by Volume: LEL: 0.9% UEL: 14%
Suitable extinguishing media: Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media: None known
Special hazards arising from the substance or mixture: None known
Hazardous combustion products: Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards: Closed Containers may rupture due to the buildup of pressure from extreme temperatures.

Advice for fire-fighters: Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:

1) Follow personal protective equipment recommendations found in section 8.
2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:

1.) Evacuate unprotected personnel from the area.
2.) Remove sources of ignition if safe to do so.
3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
4.) Contain spill to prevent material from entering sewage or ground water systems.
5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Flammable Aerosol, use in a well ventilated area.
Do not use near sources of ignition.
Store out of direct sunlight.
Storage Temperature: 32° to 120°F (0° to 49°C)
Do not to eat, drink and smoke while working with this material.
Wash hands after use.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:
Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
Keep away from sources of ignition.
Take precautionary measures against static discharge.

Personal Protection:
Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection
Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:
Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	TWA	STEL
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	300	N/AV

Aliphatic Hydrocarbon	8052-41-3	500	N/AV
Dipropylene Glycol Methyl Ether	34590-94-8	100	150
Acetone	67-64-1	500	750
Aliphatic Hydrocarbon	8032-32-4	N/AV	N/AV

9. Information on Basic Physical and Chemical Properties

Appearance: Opaque Liquid	Odor: Ketone Odor
Odor Threshold: N/AV	pH: Not Applicale (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° C (-18° F)	Evaporation Rate: Faster Than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	Upper LEL: 0.9% Lower LEL: 14%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions
Conditions to avoid: Heat and ignition sources
Incompatible materials: Strong Oxidizing Agents
Hazardous decomposition products: Will not occur

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

12. Ecological Information

Toxicity: **No Data Available**
Persistence and degradability: **No Data Available**
Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements.

For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.
Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Not Applicable

15. Regulatory Information

Workplace classification:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.
SARA Title 3:
Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.
TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.
PROP 65 (CA): Warning: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

List of relevant Risk and Safety phrases:

R Phrases: R11: Highly flammable

R12: Extremely flammable
R20: Harmful by inhalation
R36: Irritating to eyes
R37: Irritating to respiratory system
R53: May cause long-term adverse effects in the aquatic environment
R65: Harmful: may cause lung damage if swallowed
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapours may cause drowsiness and dizziness

S Phrases:
S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place
S16: Keep away from sources of ignition - No smoking
S23: Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)
S29: Do not empty into drains
S33: Take precautionary measures against static discharges
S61: Avoid release to the environment. Refer to special instructions/safety data sheet
S62: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label

National Fire Protection Association (NFPA) ratings
Health = 2 Flammability = 4 Reactivity = 1

This SDS has been completed in accordance with Regulation (EC) No. 1907/2006

Date of Preparation/Revision: 3/12/2014
Supersedes: (11/30/2010)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

Material Safety Data Sheet

Date Prepared/Revised: 3/12/2014 Version no.: 02 Supersedes: (11/30/2010)

1.) Identification of the Mixture and of the Company

Product identifier: **Aervoe Direct To Metal Rust Proofing Paint - Aerosol**

Product name:
Any-Way Spray Paint- Metallic

309 Aluminum	310 Silver	311 Gold

Relevant identified uses of the substance: Use on metal, wood, plastic, and other common surfaces including nonporous plaster.
Uses advised against: Not recommended for water immersion services.

CAS No.:	**Not Applicable (mixture)**
Manufacturer/Supplier:	**Aervoe Industries Incorporated**
Street address/P.O. Box:	**1100 Mark Circle**
Country ID/Postcode/Place	**Gardnerville, Nevada 89410**
Telephone number:	**001 (0) 1-775-782-0100**
e-mail:	**mailbox@aervoe.com**
National contact:	**Aervoe industries Incorporated**
For Product Information:	**001 (0) 1-800-227-0196**
Emergency telephone number:	**001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs)** **English Language Service**

2. Hazards identification

This product does not meet the criteria for classification according to Directive 1999/45/EC
Potential health effects: **See Section 11**
Primary routes of entry: **Inhalation, Skin, Eyes, Ingestion**

3. Composition / Information on Ingredients

Material	CAS Number	EINECS Number	Weight Percent	Risk and Safety Phrases	Notes
309 Contains:					
Hydrocarbon Propellant	68476-86-8	270-705-8	10-30%	R12, R45, R46, S45, S53	
Aliphatic Petroleum Distillates	64742-89-8	265-192-2	1-5%	R45, R46, R65, S45, S53	
Stoddard Solvent	8052-41-3	232-489-3	1-5%	R45, R46, R65, S45, S53	
Acetone	67-64-1	200-662-2	30-40%	R11, R36, R66, R67, S2, S9, S16, S26	
310 Contains:					
Hydrocarbon Propellant	68476-86-8	270-705-8	15-40%	R45, R46, R65, S53, S45	
Aliphatic Petroleum Distillates	64742-89-8	265-192-2	30-60%	R10, R20/21, R38, S2, S25	
311 Contains:					
n-Butyl Acetate	123-86-4	204-658-1	10-20%	R10, R66, R67, S2, S25	
Acetone	67-64-1	200-662-2	30-40%	R11, R36, R66, R67, S2, S9, S16, S26	
Hydrocarbon Propellant	68476-86-8	270-705-8	10-30%	R12, R45, R46, S45, S53	

For full text of R&S- phrases: see section 16.

R Code Summation: R10, R11, R12, R20/21, R36, R45, R46, R50, R61, R62, R66, R67
S Code Summation: S2, S9, S16, S25, S26, S45, S53

4.) First Aid Measures

General Advice:	If symptoms persist, always call a doctor.
Inhalation First Aid:	Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.
Skin Contact First Aid:	Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.
Eye Contact First Aid:	If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.
Ingestion First Aid:	If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

5. Fire Fighting Measures

Flammable Properties:	Aerosol
Flash Point:	<0° C (-18° F)
Auto Ignition Temperature:	Not Available
Flammable Limits in Air:	
% by Volume:	LEL: 0.9% UEL: 14%
Suitable extinguishing media:	Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media:	None known
Special hazards arising from the substance or mixture:	None known
Hazardous combustion products:	Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards:	Closed Containers may rupture due to the buildup of pressure from extreme temperatures.

Advice for fire-fighters: Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:

1) Follow personal protective equipment recommendations found in section 8.
2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:
1.) Evacuate unprotected personnel from the area.
2.) Remove sources of ignition if safe to do so.
3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
4.) Contain spill to prevent material from entering sewage or ground water systems.
5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Flammable Aerosol, use in a well ventilated area.
Do not use near sources of ignition.
Store out of direct sunlight.
Storage Temperature: 32° to 120°F (0° to 49°C)
Do not to eat, drink and smoke while working with this material.
Wash hands after use.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:
Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
Keep away from sources of ignition.
Take precautionary measures against static discharge.

Personal Protection:
Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection
Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:
Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	TWA	STEL
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	300	N/AV
Stotard Solvent	8052-41-3	100	N/AV
Acetone	67-64-1	500	750
n-Butyl Acetate	123-86-4	150	200

9. Information on Basic Physical and Chemical Properties

Appearance: Opaque Liquid	Odor: Ketone Odor
Odor Threshold: N/AV	pH: Not Applicale (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° C (-18° F)	Evaporation Rate: Faster Than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	Upper LEL: 0.9% Lower LEL: 14%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV
Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions
Conditions to avoid: Heat and ignition sources
Incompatible materials: Strong Oxidizing Agents
Hazardous decomposition products: Will not occur

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

12. Ecological Information

Toxicity: **No Data Available**
Persistence and degradability: **No Data Available**
Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or

laws governing your location.
Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosol	2.1	Not Applicable	Not Applicable	Not Applicable

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosol	2.1	Not Applicable	Not Applicable	Not Applicable

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosol	2.1	Not Applicable	Not Applicable	Not Applicable

15. Regulatory Information

Workplace classification:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.
SARA Title 3:
Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.
TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.
PROP 65 (CA): Warning: This product may contain chemicals know to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

List of relevant Risk and Safety phrases:

R Phrases: R10: Flammable

R11: Highly flammable
R12: Extremely flammable
R20/21: Harmful by inhalation and in contact with skin
R36: Irritating to eyes
R45: May cause cancer
R46: May cause heritable genetic damage
R50: Very toxic to aquatic organisms
R61: May cause harm to the unborn child
R62: Possible risk of impaired fertility
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapours may cause drowsiness and dizziness

S Phrases:
S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place
S16: Keep away from sources of ignition - No smoking
S25: Avoid contact with eyes
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible)
S53: Avoid exposure - obtain special instructions before use

National Fire Protection Association (NFPA) ratings
Health = 2 Flammability = 4 Reactivity = 1

This SDS has been completed in accordance with Regulation (EC) No. 1907/2006

Date of Preparation/Revision: 3/12/2014
Supersedes: (11/30/2010)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

AIR PRODUCTS

Material Safety Data Sheet

Version 1.4
Revision Date 04/04/2004

MSDS Number 300000000004
Print Date 04/14/2004

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Argon
Chemical formula	:	Ar
Synonyms	:	Argon, Argon gas, Gaseous Argon, GAR
Product Use Description	:	General Industrial
Company	:	Air Products and Chemicals,Inc 7201 Hamilton Blvd. Allentown, PA 18195-1501
Telephone	:	800-345-3148
Emergency telephone number	:	800-523-9374 USA 01-610-481-7711 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Volume)
Argon	7440-37-1	100 %

Concentration is nominal. For the exact product composition, please refer to Air Products technical specifications.

3. HAZARDS IDENTIFICATION

Emergency Overview

High pressure gas.
Can cause rapid suffocation.
Self contained breathing apparatus (SCBA) may be required.

Potential Health Effects

Inhalation	:	In high concentrations may cause asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
Eye contact	:	No adverse effect.
Skin contact	:	No adverse effect.
Ingestion	:	Ingestion is not considered a potential route of exposure.
Chronic Health Hazard	:	Not applicable.

Exposure Guidelines

Primary Routes of Entry	:	Inhalation
Target Organs	:	None known.
Symptoms	:	Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

Aggravated Medical Condition

None.

Environmental Effects

Not harmful.

4. FIRST AID MEASURES

General advice	:	Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Eye contact	:	Not applicable.
Skin contact	:	Not applicable.
Ingestion	:	Ingestion is not considered a potential route of exposure.
Inhalation	:	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	All known extinguishing media can be used.
Specific hazards	:	Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is nonflammable and does not support combustion. Move away from container and cool with water from a protected position. Keep containers and surroundings cool with water spray.
Special protective equipment for fire-fighters	:	Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level. Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.
Environmental precautions	:	Do not discharge into any place where its accumulation could be dangerous. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up	:	Ventilate the area.
Additional advice	:	If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If leak is from cylinder or cylinder valve, call the Air Products emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.

7. HANDLING AND STORAGE

Handling

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shocks which may cause damage to their valve or safety devices. Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F). Prolonged periods of cold temperature below -30°C (-20°F) should be avoided.

Storage

Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Return empty containers in a timely manner.

Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

Personal protective equipment

Respiratory protection	:	Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Air purifying respirators will not provide protection. Users of breathing apparatus must be trained.
Hand protection	:	Sturdy work gloves are recommended for handling cylinders. The breakthrough time of the selected glove(s) must be greater than the intended use period.
Eye protection	:	Safety glasses recommended when handling cylinders.
Skin and body protection	:	Safety shoes are recommended when handling cylinders.
Special instructions for protection and hygiene	:	Ensure adequate ventilation, especially in confined areas.
Remarks	:	Simple asphyxiant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Compressed gas.
Color	:	Colorless gas
Odor	:	No odor warning properties.
Molecular Weight	:	39.95 g/mol
Relative vapor density	:	1.379 (air = 1)
Density	:	0.106 lb/ft3 (0.0017 g/cm3) at 70 °F (21 °C) Note: (as vapor)
Specific Volume	:	9.68 ft3/lb (0.6043 m3/kg) at 70 °F (21 °C)
Boiling point/range	:	-302 °F (-185.8 °C)
Critical temperature	:	-188 °F (-122.4 °C)
Melting point/range	:	-309 °F (-189.3 °C)

Water solubility : 0.061 g/l

10. STABILITY AND REACTIVITY

Stability : Stable under normal conditions.

Hazardous decomposition products : None.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion : No data is available on the product itself.

Inhalation : No data is available on the product itself.

Skin. : No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to other organisms : No data available.

Persistence and degradability

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

Further information

This product has no known eco-toxicological effects.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Contact supplier if guidance is required. Return unused product in orginal cylinder to supplier.

Contaminated packaging : Return cylinder to supplier.

14. TRANSPORT INFORMATION

CFR

Proper shipping name : Argon, compressed
Class : 2.2
UN/ID No. : UN1006

IATA

Proper shipping name : Argon, compressed
Class : 2.2
UN/ID No. : UN1006

IMDG

Proper shipping name : ARGON, COMPRESSED
Class : 2.2
UN/ID No. : UN1006

CTC

Proper shipping name : ARGON, COMPRESSED
Class : 2.2
UN/ID No. : UN1006

Further Information
Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)
Compressed Gas.

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on Inventory.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification:
Sudden Release of Pressure Hazard.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

16. OTHER INFORMATION

NFPA Rating

Health : 0

Fire	:	0
Instability	:	0
Special	:	SA

HMIS Rating

Health	:	0
Flammability	:	0
Physical hazard	:	3

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

For additional information, please visit our Product Stewardship web site at
http//www.airproducts.com/productstewardship/

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

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1 Identification of substance

· **Product details**

· **Trade name: Argon**

· **Article number:** 002-01-0001

· **Creation date:** 05/18/2006

· **Manufacturer/Supplier:**

Linde Canada Limited
5860 Chedworth Way
Mississauga, Ontario L5R 0A2
Telephone (905) 501-1700
24-HOUR EMERGENCY TELEPHONE NUMBER:
(905) 501-0802

Linde
575 Mountain Avenue
Murray Hill, NJ 07974
Telephone (908) 464-8100
24-HOUR EMERGENCY TELEPHONE NUMBER:
CHEMTREC (800) 424-9300

Please ensure that this MSDS is received by the appropriate person.

· **Information department:** Customer Service Centre: 1-866-385-5349

2 Composition/Data on components

· **Chemical characterization:**
· **CAS No. Description**
7440-37-1 Argon
· **Identification number(s)**
· **EINECS Number:** 231-147-0

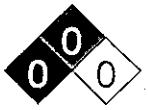
3 Hazards identification

· **Hazard description:**
· **WHMIS-symbols:**
A - Compressed gas

· **HMIS-ratings (scale 0 - 4)**

Health = 0
Fire = 0
Reactivity = 0

· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **Information pertaining to particular dangers for man and environment:** Not applicable.
· **Classification system:**
The classification is in line with internationally approved calculation standards. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

(Contd. on page 2)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

(Contd. of page 1)

· **GHS label elements** Void

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4 First aid measures

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for at least 15 minutes under running water. Then consult a doctor.
· **After swallowing:** Not applicable

*

5 Fire fighting measures

· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Protective equipment:** Wear self-contained respiratory protective device.

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6 Accidental release measures

· **Person-related safety precautions:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventillation.
Stop leak - ONLY if possible to do so without risk.
· **Measures for environmental protection:** Prevent seepage into sewage system, workpits and/or cellars.
· **Measures for cleaning/collecting:** Ensure adequate ventillation.
· **Additional information:** No dangerous substances are released.

*

7 Handling and storage

· **Handling:**
· **Information for safe handling:**
Handle with care. Avoid jolting, friction, and impact.
Use only in well ventilated areas.
Store cylinders upright with valve protection cap in place and firmly secured to prevent falling or being knocked over.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Do not expose cylinder to temperatures higher than 50°C (122 °F)
· **Information about storage in one common storage facility:**
Sources of ignition should be removed from storage area.
· **Further information about storage conditions:**
Keep cylinder valve tightly closed.
Store cylinder in a well ventilated area.

(Contd. on page 3)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

(Contd. of page 2)

Store in accordance with local fire code and/or building code or any pertaining regulations.

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8 Exposure controls and personal protection

· **Additional information about design of technical systems:**
Adequate local ventillation.
Safety showers and eyewash stations should be nearby.

· **Components with limit values that require monitoring at the workplace:**	
7440-37-1 Argon (23-100%)	
EL	Simple asphyxiant

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment:**
· **General protective and hygienic measures:**
Protective clothing should be kept free of oil and grease.
PPE should be inspected and maintained regularly to retain it's effectiveness.
· **Breathing equipment:**
Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or self-contained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary self-contained air supply atmosphere-supplying respirator) in case of insufficient ventilation.
· **Protection of hands:**

Protective gloves.

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
· **Eye protection:** Safety glasses

*

9 Physical and chemical properties

· **General Information**	
Form:	Gaseous.
Color:	Colorless
Odor:	Odorless
· **Change in condition**	
Melting point/Melting range:	-189.2°C
Boiling point/Boiling range:	-185°C
· **Flash point:**	Not applicable.
· **Danger of explosion:**	Product does not present an explosion hazard.

(Contd. on page 4)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

(Contd. of page 3)

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10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Dangerous reactions** No dangerous reactions known.
· **Dangerous products of decomposition:** No dangerous decomposition products known.

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11 Toxicological information

· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:** LC50 > 5000ppm
· **Primary irritant effect:**
· **on the skin:** No irritating effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The substance is not subject to classification.

12 Ecological information

· **General notes:** Generally not hazardous for water.

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13 Disposal considerations

· **Product:**
· **Recommendation:** Unused product should be returned to vendor.

· **Uncleaned packagings:**
· **Recommendation:**
Cylinder and unused product should be returned to vendor. Disposable cylinder must be disposed of in accordance with local regulations.
· **Recommended cleansing agent:** None applicable.

*
14 Transport information

· **TDG and DOT regulations:**

· **Hazard class:** 2.2
· **Identification number:** UN1006
· **Packing group:** -
· **Proper shipping name (technical name):** ARGON, COMPRESSED

(Contd. on page 5)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

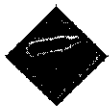
(Contd. of page 4)

· Label	2.2
· Packaging group:	-

· Maritime transport IMDG:

· IMDG Class:	2.2
· UN Number:	1006
· Label	2.2
· Packaging group:	-
· EMS Number:	F-C,S-V
· Marine pollutant:	No
· Proper shipping name:	ARGON, COMPRESSED

· Air transport ICAO-TI and IATA-DGR:



· ICAO/IATA Class:	2.2
· UN/ID Number:	1006
· Label	2.2
· Packaging group:	-
· Propper shipping name:	ARGON, COMPRESSED

· UN "Model Regulation": UN1006; ARGON, COMPRESSED; 2.2; -

*

15 Regulations

· Sara

· Section 355 (extremely hazardous substances):
Substance is not listed.

· Section 313 (Specific toxic chemical listings):
Substance is not listed.

· TSCA (Toxic Substances Control Act):
Substance is listed.

· Proposition 65

· Chemicals known to cause cancer:
Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:
Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:
Substance is not listed.

(Contd. on page 6)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

(Contd. of page 5)

· **Chemicals known to cause developmental toxicity:**
Substance is not listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**
Substance is not listed.

· **NTP (National Toxicology Program)**
Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**
Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
Substance is not listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**
Substance is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**
Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**
Substance is not listed.

· **Product related hazard informations:**
Observe the general safety regulations when handling chemicals.
The substance is not subject to classification according to the sources of literature known to us.
The product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

· **Safety phrases:**
Keep container tightly closed in a cool place.

*

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Please refer to the section 3 for NFPA and HMIS Hazard Codes.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES
Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

GENERAL DISCLAIMER
For terms and conditions, including limitation of liability, please refer to the purchase agreement in effect between

(Contd. on page 7)

Material Safety Data Sheet

Printing date 10/22/2008 Version 4 Reviewed on 10/22/2008

Trade name: Argon

(Contd. of page 6)

Linde Inc. (or any of its affiliates and subsidiaries) and the purchaser.

· **Department issuing MSDS:** Customer Service Centre: 1-866-385-5349

· **Abbreviations and Acronyms:**
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Service (Division of the American Chemical Society)
DOT: US Department of Transportation
EINECS: European Inventory of Existing Commercial Chemical Substances
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
HMIS: Hazardous Material Identification System
IATA: International Air Transportation Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transportation Association"
ICAO: International Civil Aviation Association
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization (ICAO)
IMDG: International Marine Code for Dangerous Goods
WHIMS: Workplace Hazardous Material Information System
LC50: Lethal Concentration, 50 Percent
LD50: Lethal Dose, 50 Percent
N/A: Not Applicable

tyco / Fire & Building Products

Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

BlazeMaster®
TFP-401 One Step Solvent Cement
MSDS (Material Safety Data Sheet)

MSDS No: TYC010E6 Issue Date: 11 May 2006

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
Trade Name:	BLAZEMASTER CPVC CEMENT TFP-401
Product Use:	Cement for CPVC Pipe
Formula:	CPVC Resin in Solvent Solution
Synonyms:	CPVC Plastic Pipe Cement
Firm Name & Mailing Address:	TYCO c/o OATEY CO. 4700 West 160th Street P.O. Box 35906 Cleveland, Ohio 44135, U.S.A. http://www.oatey.com
Oatey Phone Number:	(216) 267-7100 or (800) 321-9532
Emergency Phone Numbers:	For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.
Prepared By:	Corporate Director - Safety and Environmental Compliance
Preparation Date:	May 11, 2006

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS:	%wt/wt:	CAS NUMBER:	ACGIH TLV TWA:	OSHA PEL TWA:	OTHER:
Acetone	5 - 15%	67-64-1	500 ppm 750 ppm STEL	1000 ppm	
Tetrahydrofuran	40 - 55%	109-99-9	50 ppm(skin) 100 ppm STEL	200 ppm	25 ppm (Mfg)
Methyl Ethyl Ketone	5 - 15%	78-93-3	200 ppm 300 ppm STEL	200 ppm	None
Cyclohexanone	5 - 15%	108-94-1	20 ppm(skin) 50 ppm STEL	50 ppm	None
CPVC Resin (Non-hazardous)	15 - 30%	68648-82-8	10 mg/m3	None Established	None
Amorphous Fumed Silica (Non-hazardous)	1 - 5%	112945-52-5	10 mg/m3	None Established	None

OSHA Hazard Classification: Flammable, irritant, organ effects

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview:

Red liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

SECTION 4 FIRST AID MEASURES

CALL 1-877-740-5015

Skin:	Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber's Hand Cleaner or baby oil.
Eyes:	If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.
Inhalation:	If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.
Ingestion:	DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.

SECTION 5 FIRE FIGHTING MEASURES

Flashpoint / Method:	0 - 5 Degrees F. (-18 - -15 Degrees C) / PMCC
Flammability:	LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Media:	Use dry chemical, CO2, or foam to extinguish fire. Cool fire exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting Procedure:	Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards:	Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back. This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures:	Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combusting material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage:	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other:	"Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation:	Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection:	For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection:	Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm) or Silver Shield(tm) to avoid prolonged skin contact.
Eye Protection:	Safety glasses with side shields or safety goggles.
Other:	Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	151 Degrees F / 66 Degrees C
Melting Point:	Not applicable
Vapor Pressure:	145 mmHg @ 20 Degrees C
Vapor Density:	(Air = 1) 2.5
Volatile Components:	70 - 80%
Solubility In Water:	Negligible
pH:	Not applicable
Specific Gravity:	0.98 +/- 0.02 @ 20 Degrees C
Evaporation Rate:	(BUAC = 1) = 5.5 - 8.0
Appearance:	Red Liquid
Odor:	Ether-Like
Will Dissolve In:	Tetrahydrofuran
Material Is:	Liquid

SECTION 10 STABILITY AND REACTIVITY

Stability:	Stable.
Conditions To Avoid:	Avoid heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products:	Combustion will produce toxic and irritating vapors including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Materials To Avoid:	Oxidizing agents, alkalis, amines, ammonia, acids, chlorine compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization:	Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation:	Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin:	May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye:	Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion:	Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity:	Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.

Continued...

Toxicity Data:	Cyclohexanone:	Oral rat LD50: 1,620 mg/kg Inhalation rat LC50: 8,000 ppm/4 hours Skin rabbit LD50: 1 mL/kg
	Tetrahydrofuran:	Oral rat LD50: 1,650 mg/kg Inhalation rat LC50: 21,000 ppm/3 hours
	Methyl Ethyl Ketone:	Oral rat LD50: 2,737 mg/kg Inhalation rat LC50: 23,500 mg/m3/8 hours Skin rabbit LD50: 6,480 mg/kg
Sensitization:	None of the components are known to cause sensitization.	
Carcinogenicity:	None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as "A3," Confirmed Animal Carcinogens with Unknown Relevance to Humans.	
Mutagenicity:	Cyclohexanone has been positive in bacterial and mammalian assays. Methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.	
Reproductive Toxicity:	Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.	
Medical Conditions Aggravated By Exposure:	Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.	

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms.
Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/l.
Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L.
Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: This product emits VOC's (volatile organic compounds) in its use. Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: 490 g/l per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U057, U159, U213

EPA Hazardous Waste ID Number: D001, D035, F003, F005

EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT	Less than 1 Liter (0.3 gal)	Greater than 1 Liter (0.3 gal)
Proper Shipping Name:	Consumer Commodity	Adhesives
Hazard Class/Packing Group:	ORM-D	3, PGII
UN/NA Number:	None	UN1133
Hazard Labels:	None	Flammable Liquid
IMDG		
Proper Shipping Name:	Adhesives	Adhesives
Hazard Class/Packing Group:	3, II	3, II
UN Number:	UN1133	UN1133
Label:	None (Limited Quantities are excepted from labeling)	Class 3 (Flammable Liquid)

2004 North American Emergency Response Guidebook Number: 127 or 128

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312:	Acute Health, Chronic Health, Flammable
Section 302 Extremely Hazardous Substances (TPQ):	This product does not contain chemicals regulated under SARA Section 302.
Section 313 Toxic Chemicals:	This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements:

Chemical	CAS #	% by wt.
Methyl Ethyl Ketone	78-93-3	5 - 15%

CERCLA 103 Reportable Quantity:	Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (45% maximum) of 1,000 lbs, is 2,222 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
California Proposition 65:	This product contains trace amounts of chemicals known to the State of to cause cancer. Under normal Use conditions, exposure to these chemicals at levels above the State of California "No Significant Risk Level" (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.
TSCA Inventory:	All of the components of this product are listed on the TSCA inventory.
Canadian WHIMS Classification:	Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal:	Health: 2	Flammability: 3	Reactivity: 1	Special: None
HMIS Hazard Signal:	Health: 2*	Flammability: 3	Reactivity: 1	PPE: H

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.

BROOKS SIGN ON SPRAY ADHESIVE 9.5 OZ.

MANUFACTURED FOR: BROOKS EQUIPMENT CO., INC.
ADDRESS: P.O. BOX 481888
CHARLOTTE, NC 28269
EMERGENCY PHONE NUMBER: CHEM TREC
1-800-424-9300

INFORMATION NUMBER: 1-574-848-1001

H. M. I. S.	
HEALTH	2
REACTIVITY	0
FLAMMABILITY	4

THESE RATINGS SHOULD BE USED ONLY AS PART OF A FULLY IMPLEMENTED HMIS SYSTEM

MATERIAL SAFETY DATA SHEET

SECTION I

PRODUCT CLASS: AEROSOL ADHESIVE
PRODUCT CODE NUMBER: SIGN ON ADHESIVE
DATE: 12/11/11
HAZARDOUS MATERIAL DESCRIPTION: Consumer Commodity ORM-D
PRODUCT NAME: BROOKS SIGN ON SPRAY ADHESIVE 9.5 OZ.

SECTION II- HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO	OSHA PEL	TWA TLV	STEL	SARA 313	WT % (OPTIONAL)
ACETONE	67-64-1	750	750	1000		20 - 30
PROPANE	74-98-6	1000	1000	ASPHYXIANT		20 – 30
HEXANE	110-54-3	50	50		X	15 - 20
ISOBUTANE	75-28-5	N/A	800	N/A		5 - 15

SECTION III- HEALTH HAZARD INFORMATION

EFFECTS OF OVEREXPOSURE:
PRIMARY ROUTES OF ENTRY: SKIN CONTACT, EYE CONTACT, ABSORPTION, INHALATION.

INHALATION: CAN CAUSE IRRITATION TO THE NOSE AND THROAT. HIGH CONCENTRATIONS MAY CAUSE HEADACHES, DIZZINESS, NAUSEA, AND CONFUSION.
EYE: MAY CAUSE EYE IRRITATION
SKIN: MAY CAUSE TRANSIENT SKIN IRRITATION
INGESTION: MAY CAUSE GASTROINTESTINAL IRRITATION
OTHER: REPORTS HAVE ASSOCIATED PROLONGED AND REPEATED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

SECTION IV- FIRST AID PROCEDURES

SWALLOWING: IF SWALLOWED DO NOT INDUCE VOMITING. CALL POISON CONTROL CENTER, HOSPITAL EMERGENCY ROOM OR PHYSICIAN IMMEDIATELY.
INHALATION: REMOVE TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED GIVE ARTIFICIAL RESPIRATION. KEEP WARM AND QUIET. GET MEDICAL ATTENTION.
EYE: FLUSH WITH LARGE AMOUNTS OF WATER, LIFTING UPPER AND LOWER LIDS OCCASIONALLY. CONTINUE FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.
SKIN: REMOVE CONTAMINATED CLOTHING. WASH AFFECTED AREA WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION PERSISTS.

BROOKS SIGN ON SPRAY ADHESIVE 9.5 OZ.

SECTION V- PHYSICAL DATA

BOILING POINT	-40F TO 160F	SPECIFIC GRAVITY	0.6
VAPOR PRESSURE PSIG @ 70F	70 APPROX.	MELTING POINT	N.A.
VAPOR DENSITY	2.5	% VOLATILE	80%

APPEARANCE AND ODOR: CLEAR LIGHT AMBER SOLUTION

SECTION VI – FIRE AND EXPLOSION DATA

FLASH POINT AND METHOD: -40F TCC

FLAMMABLE LIMITS: 1.8 LEL 12.0 UEL

UNUSUAL FIRE AND EXPLOSION HAZARDS: AEROSOL CANS MAY RUPTURE WHEN HEATED.

EXTINGUISHING MEDIA: USE WATER FOG, DRY CHEMICAL, FOAM OR CARBON DIOXIDE.

SPECIAL FIRE FIGHTING PROCEDURES: HEATING OF CONTENTS ABOVE 130F MAY CAUSE CANS TO BURST.

SECTION VII- REACTION DATA

STABILITY: STABLE
CONDITIONS TO AVOID: STORING IN HIGH TEMPERATURES OR EXPOSING TO OPEN FLAMES
INCOMPATIBILITY (CONDITIONS TO AVOID): NONE
HAZARDOUS DECOMPOSITION PRODUCTS: CARBON MONOXIDE AND CARBON DIOXIDE.
HAZARDOUS POLYMERIZATION: NONE

SECTION VIII- SPILL OR LEAK INFORMATION

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: ELIMINATE ALL SOURCES OF IGNITION. PERMIT ONLY PROPERLY PROTECTED WORKERS IN THE AREA WITH SKIN/EYE PROTECTION AND SELF CONTAINED BREATHING GEAR. ABSORB SMALL SPILLS WITH INERT ABSORBENT MATERIAL. CONTAIN SPILLED LIQUID TO PREVENT CONTAMINATION OF SOIL, SURFACE WATER OR GROUND WATER. CONTACT STATE, LOCAL AND FEDERAL AGENCIES TO ENSURE COMPLIANCE WITH CURRENT REGULATIONS.

WASTE DISPOSAL METHOD: WASTE MUST BE DISPOSED OF ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS.

SECTION IX- PERSONAL PROTECTION INFORMATION

RESPIRATION PROTECTION: IF THE TLV'S LISTED IN SECTION II ARE EXCEEDED USE A PROPERLY FITTED NIOSH/MSHA APPROVED RESPIRATOR
VENTILATION: LOCAL AND MECHANICAL VENTILATION ARE RECOMMENDED TO KEEP ANY HAZARDOUS INGREDIENTS LISTED IN SECTION II BELOW THE LOWEST EXPOSURE LIMIT.
HAND PROTECTION: RESISTANT PLASTIC OR RUBBER RECOMMENDED.
EYE PROTECTION: WEAR SAFETY CHEMICAL SPLASH GOGGLES.
OTHER PROTECTIVE EQUIPMENT: NOT LIKELY TO BE NEEDED.

SECTION X- SPECIAL PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: STORE CANS IN A COOL, DRY AND WELL VENTILATED AREA AWAY FROM ALL IGNITION SOURCES. PROLONGED EXPOSURE OF CANS TO ELEVATED TEMPERATURES MAY CAUSE CANS TO RUPTURE OR BURST.

THE FOREGOING DATA HAS BEEN COMPILED FROM SOURCES WE BELIEVE TO BE ACCURATE. NO WARRANTY, EXPRESS OR IMPLIED, IS INTENDED. THIS INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION AND INTERPRETATION.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name	**Butane**
Version #	01
Issue date	05-06-2013
Revision date	-
Supersedes date	-
CAS #	Mixture
MSDS Number	WC026
Product use	Hand Torch Fuel
Manufacturer/Supplier	Worthington Cylinder Corporation 1 Bernzomatic Drive Medina, NY 14103 US andrew.szatkowski@worthingtonindustries.com Contact Person: Andrew Szatkowski
Telephone Number:	585-798-6067
Emergency	CHEMTREC - 24 HOURS: (800) 424-9300

2. Hazards Identification

Physical state	Gas (Liquefied).
Appearance	Colorless gas.
Emergency overview	DANGER Extremely flammable gas. High pressure gas. Gas reduces oxygen available for breathing. Contact with liquefied gas might cause frostbites, in some cases with tissue damage. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Static accumulating flammable materials can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite material and vapor may cause flash fire (or explosion).
OSHA regulatory status	This product is hazardous according to OSHA 29 CFR 1910.1200.
Potential health effects	
Routes of exposure	Inhalation. Skin and/or eye contact.
Eyes	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn").
Skin	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn").
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Nasal and respiratory tract irritation, central nervous system effects including excitation, euphoria, contracted eye pupils, dizziness, drowsiness, blurred vision, fatigue, nausea, headache, loss of reflexes, tremors, convulsions, seizures, loss of consciousness, coma, respiratory arrest and sudden death could occur as a result of long term and/or high concentration exposure to vapors. May also cause anemia and irregular heart rhythm.
Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Target organs	Respiratory tract. Eyes. Central nervous system. Skin.
Chronic effects	May cause central nervous system effects. Components have been shown to be weak cardiac sensitizers which can result in cardiac arrhythmia and ventricular fibrillation.
Signs and symptoms	Contact with liquefied gas can cause damage (frostbite) due to rapid evaporative cooling.
Potential environmental effects	Not expected to be harmful to aquatic organisms.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Isobutane	75-28-5	60 - 80

Components	CAS #	Percent
Butane	106-97-8	20 - 40

4. First Aid Measures

First aid procedures

Eye contact — Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Skin contact — Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100 F/38 C and 110 F/43 C, not exceeding 112 F/44 C). Keep immersed for 20 to 40 minutes. Seek medical assistance.

Inhalation — Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Ingestion — Ingestion is not a typical route of exposure for gases or liquefied gases.

Notes to physician — Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.

5. Fire Fighting Measures

Flammable properties — This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

For fires involving this material, do not enter any enclosed or confined space without proper protective equipment. This may include self-contained breathing apparatus against the hazardous effects of normal products of combustion of oxygen deficiency. Vapors are heavier than air and may travel along the ground to some distant source of ignition and flash back.

Extinguishing media

Suitable extinguishing media — Dry chemical, CO2, water spray, fog, or foam.

Protection of firefighters

Protective equipment and precautions for firefighters — Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions — Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.

Move container from fire area if it can be done without risk.

Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

Hazardous combustion products — Carbon oxides. Carbon Dioxide. Hydrocarbons.

6. Accidental Release Measures

Personal precautions — Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).

Environmental precautions — Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

Methods for cleaning up — Eliminate all ignition sources. Ventilate area well. Avoid accumulation of vapor at low levels.

7. Handling and Storage

Handling

Keep away from heat, spark, open flames and other sources of ignition.
Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation. Risk of vapor concentration on the floor and in low-lying areas.

Storage

Store in accordance with local, regional, national, and international regulations. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry, well-ventilated place. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage. Do not store, incinerate, or heat this material above 120 degrees Fahrenheit.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Isobutane (CAS 75-28-5)	TWA	1000 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1000 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Butane (CAS 106-97-8)	STEL	750 ppm
	TWA	1000 ppm
Isobutane (CAS 75-28-5)	TWA	1000 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	800 ppm
Isobutane (CAS 75-28-5)	TWA	800 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm

Engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. The engineering controls also need to keep gas, vapor, or dust concentrations below any lower explosive limits.

Personal protective equipment

Eye / face protection

Wear approved safety glasses or goggles.

Skin protection

Wear protective clothing appropriate for the risk of exposure.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical & Chemical Properties

Appearance

Colorless gas.

Physical state

Gas (Liquefied).

Form	Compressed liquefied gas.
Color	Colorless
Odor	Faint. Gasoline-like.
Odor threshold	Not available.
pH	Not available.
Vapor pressure	28 psig (Approximate)
Vapor density	> 2 (Air = 1)
Boiling point	-11.7 °F (-24.28 °C)
Melting point/Freezing point	-216.76 °F (-138.2 °C)
Solubility (water)	< 0.1 % in water at 70°F
Specific gravity	0.57 (H2O = 1)
Flash point	-76.3 °F (-60.2 °C)
Flammability limits in air, upper, % by volume	8.4 %
Flammability limits in air, lower, % by volume	1.8 %
Auto-ignition temperature	548.33 °F (286.85 °C)
Percent volatile	100 %
Molecular weight	58.12 g/mol
Molecular formula	C4-H10

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions and recommended use.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Halogens.
Hazardous decomposition products	Carbon monoxide.
Possibility of hazardous reactions	Polymerization will not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours

Sensitization	Not available.
Acute effects	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Chronic effects	May cause central nervous system effects.
Symptoms and target organs	Vapors may cause drowsiness and dizziness.

12. Ecological Information

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	Not available.
Bioaccumulation / Accumulation	

Partition coefficient

Butane (CAS 106-97-8)	2.89
Isobutane (CAS 75-28-5)	2.76

13. Disposal Considerations

Disposal instructions Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1011
Proper shipping name	Butane
Hazard class	2.1

Additional information:

Special provisions	19, T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315
Reportable quantity	100

IATA

UN number	UN1011
UN proper shipping name	Butane
Transport hazard class(es)	2.1
Labels required	2.1

IMDG

UN number	UN1011
UN proper shipping name	Butane
Transport hazard class(es)	2.1
Labels required	2.1

TDG

UN number	UN1011
Proper shipping name	Butane
Hazard class	2.1
Special provisions	19, T50
Labels required	2.1
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

Isobutane: 100
Butane: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
Section 302 extremely hazardous substance (40 CFR 355, Appendix A)	No
SARA 311/312 Hazardous chemical	No
Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)	Not controlled
Canadian regulations	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
WHMIS status	Controlled
WHMIS classification	A - Compressed Gas B1 - Flammable Gases

WHMIS labeling

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

State regulations

US - California Hazardous Substances (Director's): Listed substance

Butane (CAS 106-97-8)	Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

US - New Jersey RTK - Substances: Listed substance

Butane (CAS 106-97-8)	Listed.
Isobutane (CAS 75-28-5)	Listed.

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)	Listed.
Isobutane (CAS 75-28-5)	Listed.

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)	500 lbs
Isobutane (CAS 75-28-5)	500 lbs

US. Pennsylvania RTK - Hazardous Substances

Butane (CAS 106-97-8)	Listed.

Isobutane (CAS 75-28-5)	Listed.

Mexico regulations This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 1
Flammability: 4
Physical hazard: 1

NFPA ratings
Health: 1
Flammability: 4
Instability: 1

Disclaimer All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

Material Safety Data Sheet

Carbon Dioxide

Section 1. Chemical product and company identification

Product Name : Carbon Dioxide

Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Product use : Synthetic/Analytical chemistry.

MSDS# : 001013

Date of Preparation/Revision : **4/11/2005.**

In case of emergency : 1-800-949-7937

Section 2. Composition, Information on Ingredients

Name	CAS number	% Volume	Exposure limits
Carbon Dioxide	124-38-9	100	**ACGIH TLV (United States, 9/2004).** STEL: 54000 mg/m³ 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m³ 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms **NIOSH REL (United States, 6/2001).** STEL: 54000 mg/m³ 15 minute(s). Form: All forms STEL: 30000 ppm 15 minute(s). Form: All forms TWA: 9000 mg/m³ 10 hour(s). Form: All forms TWA: 5000 ppm 10 hour(s). Form: All forms **OSHA PEL (United States, 6/1993).** TWA: 9000 mg/m³ 8 hour(s). Form: All forms TWA: 5000 ppm 8 hour(s). Form: All forms

Section 3. Hazards identification

Physical state : Gas.

Emergency overview : Warning!

CONTENTS UNDER PRESSURE.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, CARDIOVASCULAR SYSTEM, SKIN, EYES, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

Avoid contact with skin and clothing. Avoid breathing gas. Do not puncture or incinerate container. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Contact with rapidly expanding gas, liquid, or solid can cause frostbite.

Routes of entry : Inhalation,Dermal,Eyes

Potential acute health effects

Eyes : Moderately irritating to the eyes.

Skin : Moderately irritating to the skin.

Inhalation : Moderately irritating to the respiratory system.

Ingestion : Ingestion is not a normal route of exposure for gases

Potential chronic health effects : **CARCINOGENIC EFFECTS** Not available.
MUTAGENIC EFFECTS Not available.
TERATOGENIC EFFECTS Not available.

Medical conditions aggravated by overexposure : Acute or chronic respiratory conditions may be aggravated by overexposure to this gas.

See toxicological information (section 11)

Section 4. First aid measures

No action shall be taken involving any personal risk or without suitable training.If fumes are still suspected to be present, the rescuer should wear an appropriate mask or a self-contained breathing apparatus.It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Section 5. Fire fighting measures

Flammability of the product : Non-flammable.

Fire fighting media and instructions : Use an extinguishing agent suitable for surrounding fires.

If involved in fire, shut off flow immediately if it can be done without risk. Apply water from a safe distance to cool container and protect surrounding area.

No specific hazard.

Special protective equipment for fire-fighters : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Shut off gas supply if this can be done safely. Isolate area until gas has dispersed.

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 7. Handling and storage

Handling : Avoid contact with eyes, skin and clothing. Keep container closed. Use only with adequate ventilation. Do not puncture or incinerate container. Wash thoroughly after handling. High pressure gas. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Never allow any unprotected part of the body to touch uninsulated pipes or vessels that contain cryogenic liquids. Prevent entrapment of liquid in closed systems or piping without pressure relief devices. Some materials may become brittle at low temperatures and will easily fracture.

Storage : Keep container tightly closed. Keep container in a cool, well-ventilated area. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure Controls, Personal Protection

Engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal protection

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

When working with cryogenic liquids, wear a full face shield.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

The applicable standards are (US) 29 CFR 1910.134 and (Canada) Z94.4-93

Hands : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Insulated gloves suitable for low temperatures

Personal protection in case of a large spill : A self-contained breathing apparatus should be used to avoid inhalation of the product.

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

Molecular weight : 44.01 g/mole

Molecular formula : CO_2

Boiling/condensation point : -78.55°C (-109.4°F)

Melting/freezing point : Sublimation temperature: -78.5°C (-109.3°F)

Critical temperature : 30.9°C (87.6°F)

Vapor pressure : 830 psig

Vapor density : 1.53 (Air = 1)

Specific Volume (ft^3/lb) : 8.77193

Gas Density (lb/ft^3) : 0.114

Physical chemical comments : Not available.

Section 10. Stability and reactivity

Stability and reactivity : The product is stable.

Section 11. Toxicological information

Toxicity data

IDLH : 40000 ppm

Chronic effects on humans : Causes damage to the following organs: lungs, cardiovascular system, skin, eyes, central nervous system (CNS), eye, lens or cornea.

Other toxic effects on humans : No specific information is available in our database regarding the other toxic effects of this material for humans.

Specific effects

Carcinogenic effects : No known significant effects or critical hazards.

Mutagenic effects : No known significant effects or critical hazards.

Reproduction toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Products of degradation : These products are carbon oxides (CO, CO_2).

Toxicity of the products of biodegradation : The product itself and its products of degradation are not toxic.

Environmental fate : Not available.

Environmental hazards : No known significant effects or critical hazards.

Toxicity to the environment : Not available.

Section 13. Disposal considerations

Product removed from the cylinder must be disposed of in accordance with appropriate Federal, State, local regulation.Return cylinders with residual product to Airgas, Inc.Do not dispose of locally.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		**Limited quantity** Yes. **Packaging instruction** **Passenger Aircraft** Quantity limitation: 75 kg **Cargo Aircraft** Quantity limitation: 150 kg
TDG Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75
Mexico Classification	UN1013 UN2187	CARBON DIOXIDE Carbon dioxide, refrigerated liquid	2.2	Not applicable (gas).		-

Section 15. Regulatory information

United States

U.S. Federal regulations : TSCA 8(b) inventory: Carbon Dioxide

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: Carbon Dioxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Carbon Dioxide: Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

State regulations : Pennsylvania RTK: Carbon Dioxide: (generic environmental hazard)
Massachusetts RTK: Carbon Dioxide
New Jersey: Carbon Dioxide

Canada

WHMIS (Canada) : Class A: Compressed gas.

CEPA DSL: Carbon Dioxide

Section 16. Other information

United States

Label Requirements : CONTENTS UNDER PRESSURE.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: LUNGS, CARDIOVASCULAR SYSTEM, SKIN, EYES, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.

Canada

Label Requirements : Class A: Compressed gas.

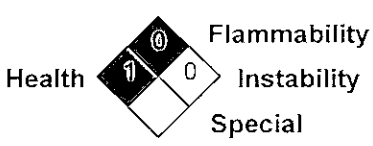
Hazardous Material Information System (U.S.A.) :

Health	* 1
Fire hazard	0
Reactivity	0
Personal protection	C

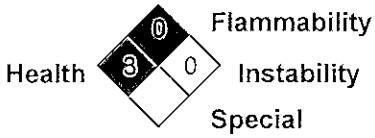
liquid:

Health	3
Fire hazard	0
Reactivity	0
Personal protection	

National Fire Protection Association (U.S.A.) :



liquid:



Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Carbon Dioxide
(Fire Extinguishing Agent and Expellant)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Carbon Dioxide (Fire Extinguishing Agent and Expellant)
Other Trade Names	CO2
Product Description	Fire Extinguishing Agent and Expellant
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Flammable Gas

Routes of Entry
- Eye contact - Inhalation - Skin contact

Carcinogenic Status
Not considered carcinogenic by NTP, IARC, and OSHA.

Target Organs
- Respiratory System - Skin - Eye – Cardiovascular System

Health Effects - Eyes
Direct contact with the cold gas or liquid can cause freezing of exposed tissues, with pain, redness, burns and corneal damage. Moisture in the air can react to form carbonic acid which causes eye irritation.

Health Effects - Skin
Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

Health Effects - Ingestion
Ingestion is not a possible route of exposure.

Health Effects - Inhalation
Exposure to vapor at high concentrations have the following effects: - light headedness - dizziness - difficulty with breathing - drowsiness - nausea - mental confusion - increased blood pressure – increased respiratory rate - loss of consciousness which may prove fatal due to suffocation as it displaces oxygen. Individuals with pre-existing disease will be at increased risk.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Carbon Dioxide	124-38-9 EC#204-696-9	>99.8	None	Non Flammable Gas

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of warm water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Gently warm affected areas. Obtain medical attention if blistering occurs or redness persists.
Ingestion
Ingestion is not considered a potential route of exposure.
Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.
Advice to Physicians
In case of frostbite, place the frostbitten part in warm water. If warm water is not available or impractical to use, wrap the affected parts gently in blankets. DO NOT USE HOT WATER.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
Carbon Dioxide is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire.
Unusual Fire and Explosion Hazards
Containers may explode in heat of fire.
Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Wear full protective clothing and self-contained breathing apparatus. Remove leaking cylinder to a safe place. Ventilate the area. Vapors can accumulate in low areas. Leaks inside confined spaces may cause suffocation as oxygen is displaced and should not be entered without a self-contained breathing apparatus.

7. HANDLING AND STORAGE

Cylinders should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike against each other. Never apply flame or localized heat directly to any part of the cylinder. Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Carbon Dioxide
ACGIH TLV: 5000 ppm (9000 mg/m3) STEL: 30,000 ppm (54,000 mg/m3)
OSHA PEL: 5000 ppm (9000 mg/m3)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes or odor becomes apparent, use local exhaust ventilation.

Respiratory Protection
Not normally required under conditions of use as a portable fire extinguisher. For other applications creating oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Hand Protection
Wear rubber gloves. Avoid contact with skin.

Eye Protection
Chemical goggles or safety glasses with side shields. Avoid contact with eyes.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquefied gas under pressure
Color	Colorless
Odor	Odorless to Slightly Acidic
Specific Gravity	1.522
Boiling Range/Point (°C/F)	-109.3°F
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Soluble
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	838 psig @70°F and 1 atmosphere
Gas Density	0.1144 lb/ft^3
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Heat - high temperatures - exposure to direct sunlight

Materials to Avoid
Alkali or alkaline earth metal (ex. aluminum, zinc, etc.) - strong oxidizing agents

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
In contact with moisture will generate carbonic acid

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Simple asphyxiant. LCLo (inhalation in humans): 90,000ppm/ 5 minutes.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
Carbon dioxide occurs naturally in the atmosphere.

Persistence/Degradability
Carbon dioxide occurs naturally in the atmosphere.

Bio-accumulation
Carbon dioxide occurs naturally in the atmosphere.

Ecotoxicity
Aquatic Toxicity: 100-200 mg/l/no time specified/various organisms/fresh water
Waterfowl toxicity: 5-8%, no effect

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. If spilled, contents will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Carbon Dioxide, 2.2, UN1013
UN Proper Shipping Name	Carbon Dioxide
UN Class	(2.2) Non-Flammable Gas
UN Number	UN1013
UN Packaging Group	Not applicable

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.
Non Flammable Gas

R phrases
None

15. REGULATORY INFORMATION

S phrases
S9 Keep container in a well ventilated place.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing
This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing
All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS) or are exempt from listing.

DSL/NDSL (Canadian) Listing
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification
A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law
All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: - carbon dioxide

PA Right To Know Law
This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - carbon dioxide

NJ Right To Know Law
This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - carbon dioxide

California Proposition 65
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)
This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard - Pressure Hazard

SARA Title III Sect. 313
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety
LCLo: Lethal concentration low

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"Carbon Dioxide"
Chemical Name:	Carbon Dioxide.
CAS No.:	124-38-9.
Chemical Formula:	CO_2.
EINECS Number:	204-696-9.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	May, 2004

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1. Ingredient Name:	Carbon Dioxide.
Chemical Formula:	CO_2.
CAS No.:	124-38-9.
EINECS Number:	204-696-9.
Concentration, Wt %:	100%.
Hazard Identification:	See Heading 3.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.

Limit Values for Exposure:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.

This substance has not been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	Contact with carbon dioxide snow (dry ice) can produce chilling sensations and discomfort, also frostbite.
Skin Contact:	Evaporation of liquid from the skin can produce chilling sensations. Frostbite can occur. Avoid carbon dioxide snow (dry ice).
Inhalation:	Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations of vapor can cause lightheadedness, giddiness, shortness of breath, muscular tremors, and weakness, acrocyanosis. Also unconsciousness or even death
Ingestion:	Ingestion is not likely to occur since this substance is a gas at room temperature.

Chronic Overexposure: No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Respiratory problems.

FOR ENVIRONMENT:

Carbon dioxide is a global warming gas.

4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with water for a minimum of 15 minutes. If redness, itching or a burning sensation develops, get medical attention. Treat for frostbite if necessary.
Skin Contact:	If redness, itching or a burning sensation develops, get medical attention. Treat for frostbite if necessary.
Inhalation:	Remove victim to fresh air. If cough or other respiratory symptoms occur, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.
Ingestion:	None needed.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.

There are NO extinguishing media which must not be used for safety reasons.

Though gas cylinders are equipped with pressure and temperature relief devices, they should be removed from high temperature areas or fires, if safe to do so, to avoid risk of rupture.

NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.

Clean up: This substance will vaporize into the atmosphere, see Heading 13.

This substance is a global warming gas.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.

Secure to prevent falling. Do not move without safety cap in place to prevent damage to valve.

See incompatibility information in Heading 10.

7.2. Storage

Store containers in a clean, dry, well-ventilated area, away from heat above 120 °F. Store as a compressed gas in DOT approved vessels. Keep safety cap in place while in storage.

See incompatibility information in Heading 10.

This substance is a global warming gas.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Limit Values for Exposure:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Not expected to be needed if controls are adequate. If TLV is exceeded or if exposure is prolonged, a self-contained breathing apparatus is recommended. Maintain good ventilation during use of this substance in order to minimize worker exposure.

8.2.1.2. Hand protection

Protective gloves for contact with dry ice.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles particularly when handling the liquid.

8.2.1.4. Skin protection

Protective clothing as needed for contact with dry ice.

8.2.2. Environmental exposure controls

Since this is a gas at normal conditions, release should be only as needed to extinguish fires.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Colorless gas.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	Sublimes.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	830 psi @ 20 °C.
Relative Density:	Not applicable.
Solubility:	
– Water solubility:	88 ml carbon dioxide per 100 ml @ 20 °C.
– Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not determined.
Viscosity:	Not determined.
Vapor density (Air = 1):	1.5.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

Extremely high temperatures, as in a fire may cause a cylinder to fail.

There are no known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

(Al + Na_2O_2), (Mg + Na_2O), Cs_2O, Li, K, $Mg(C_2H_5)_2$, KC_2H, Na, NaK, and Ti.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will not occur.

There are no hazardous combustion or decomposition products.

11. TOXICOLOGICAL INFORMATION

Inhalation LC_{LO} (human) = 100,000 ppm/min.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

This material is a normal atmospheric gas.

12.2. Mobility

This material is a normal atmospheric gas.

12.3. Persistence and degradability

This material is a normal atmospheric gas.

12.4. Bioaccumulative potential

This material is a normal atmospheric gas.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	This is a global warming gas.

13. DISPOSAL CONSIDERATIONS

This preparation, if spilled it will vaporize to the atmosphere.
This is a global warming gas.

14. TRANSPORT INFORMATION

Hazard Class or Division:	Carbon Dioxide, Class 2.2, UN1013
Label:	Nonflammable gas.

Emergency response guide page number: 120; EMS (Intl): 2-09.
For additional transport information, contact Flag Fire.
This is a global warming gas.

15. REGULATORY INFORMATION

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.

Exposure Limit Values:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.
EINECS Status: All components are included in EINECS inventories or are exempt from listing.
EPA TSCA Status All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.
Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

Toxicological information added from the EINICS ESIS (Existing Substances Information System). A rating under WHMIS has been added, following the Canadian guidelines.

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated: **A – Compressed Gas.**

Format is from directive 2001/58/EC.

EINECS data is from http://exb.jrc.it/existing-chemicals/

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

CARBON DIOXIDE, GAS
Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	CARBON DIOXIDE, GAS
Product Code(s)	G-8, 1010
UN-Number	UN1013
Recommended Use	Compressed gas.
Synonyms	LASER Carbon Dioxide, LASER Carbon Dioxide Ultra, Carbonic Anhydride, Carbonic Acid Gas, Carbon Dioxide USP
Supplier Address*	Linde Gas North America LLC - Linde Merchant Production Inc. - Linde LLC 575 Mountain Ave, Murray Hill, NJ 07974 Phone: 908-464-8100 www.lindeus.com Linde Gas Puerto Rico, Inc. Las Palmas Village Road No. 869, Street No. 7 Catano, Puerto Rico 00962 Phone: 787-641-7445 www.pr.lindegas.com Linde Canada Limited 5860 Chedworth Way Mississauga, Ontario L5R 0A2 Phone: 905-501-1700 www.lindecanada.com * May include subsidiaries or affiliate companies/divisions. For additional product information contact your local customer service.
Chemical Emergency Phone Number	Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Simple asphyxiant
Contents under pressure
Keep at temperatures below 52°C / 125°F

Appearance Colorless | Physical State Compressed gas. | Odor Odorless

OSHA Regulatory Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Potential Health Effects

Principle Routes of Exposure	Inhalation.
Acute Toxicity	
Inhalation	Simple asphyxiant. May cause suffocation by displacing the oxygen in the air. Exposure to oxygen-deficient atmosphere (<19.5%) may cause dizziness, drowsiness, nausea, vomiting, excess salivation, diminished mental alertness, loss of consciousness and death. Exposure to atmospheres containing 8-10% or less oxygen will bring about unconsciousness without warning and so quickly that the individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death. Depending on concentration and duration of exposure to carbon dioxide may cause increased respirations, headache, mild narcotic effects, increased blood pressure and pulse, and asphyxiation. Symptoms of overexposure become more apparent when atmospheric oxygen is decreased to 15-17%.
Eyes	None known.
Skin	None known.
Skin Absorption Hazard	No known hazard in contact with skin.
Ingestion	None known.
Chronic Effects	Chronic harmful effects are not known from repeated inhalation of concentrations below PEL/TLV
Aggravated Medical Conditions	Respiratory disorders.
Environmental Hazard	See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Volume %	Chemical Formula
Carbon dioxide	124-38-9	>99	CO_2

4. FIRST AID MEASURES

Eye Contact	None under normal use. Get medical attention if symptoms occur.
Skin Contact	None under normal use. Get medical attention if symptoms occur.
Inhalation	PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF INHALATION OVEREXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS. Conscious inhalation victims should be assisted to an uncontaminated area and inhale fresh air. If breathing is difficult, administer oxygen. Unconscious persons should be moved to an uncontaminated area and, as necessary, given artificial resuscitation and supplemental oxygen. Treatment should be symptomatic and supportive.
Ingestion	None under normal use. Get medical attention if symptoms occur.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Not flammable.
Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Explosion Data

Sensitivity to Mechanical Impact	None
Sensitivity to Static Discharge	None
Specific Hazards Arising from the Chemical	Cylinders may rupture under extreme heat. Continue to cool fire exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.
Protective Equipment and Precautions for Firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment. Monitor oxygen level.
Environmental Precautions	Prevent spreading of vapors through sewers, ventilation systems and confined areas.
Methods for Containment	Stop the flow of gas or remove cylinder to outdoor location if this can be done without risk. If leak is in container or container valve, contact the appropriate emergency telephone number in Section 1 or call your closest Linde location.
Methods for Cleaning Up	Return cylinder to Linde or an authorized distributor.

7. HANDLING AND STORAGE

Handling

Use only in ventilated areas. Never attempt to lift a cylinder by its valve protection cap.

Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distance, use a cart designed to transport cylinders. Use equipment rated for cylinder pressure. Use backflow preventive device in piping. Never insert an object (e.g, wrench, screwdriver, pry bar,etc.) into valve cap openings. Doing so may damage valve, causing leak to occur.

Use an adjustable strap wrench to remove over-tight or rusted caps. Close valve after each use and when empty. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier.

Never put cylinders into trunks of cars or unventilated areas of passenger vehicles. Never attempt to refill a compressed gas cylinder without the owner's written consent. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. For applications with moist Carbon Dioxide, 316, 309 and 310 stainless steels may be used as well as Hastelloy® A, B, & C and Monel®. Ferrous nickel alloys are slightly suspectible to corrosion. At normal temperatures carbon dioxide is compatible with most plastics and elastomers.

For additional storage recommendations, consult Compressed Gas Association's Pamphlets P-1,AV-7, G-6, G-6.1, G-6.2, G6.3, G-6.5, G-6.7, G-6.9, PS-5,TB-10, and SB-2.

Storage

Protect from physical damage. Cylinders should be stored upright with valve protection cap in place and firmly secured to prevent falling. Store in cool, dry, well-ventilated area of non-combustible construction away from heavily trafficked areas and emergency exits. Keep at temperatures below 52°C / 125°F. Full and empty cylinders should be segregrated. Use a "first in-first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Carbon dioxide 124-38-9	STEL = 30000 ppm TWA: 5000 ppm	TWA: 5000 ppm TWA: 9000 mg/m³ (vacated) TWA: 10000 ppm (vacated) TWA: 18000 mg/m³ (vacated) STEL: 30000 ppm (vacated) STEL: 54000 mg/m³	IDLH: 40000 ppm TWA: 5000 ppm TWA: 9000 mg/m³ STEL: 30000 ppm STEL: 54000 mg/m³

Immediately Dangerous to Life or Health.

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures

Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%.

Ventilation

Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/Face Protection

Wear protective eyewear (safety glasses).

Skin and Body Protection

Work gloves and safety shoes are recommended when handling cylinders.

Respiratory Protection

General Use

No special protective equipment required.

Emergency Use

Use positive pressure airline respirator with escape cylinder or self contained breathing apparatus for oxygen-deficient atmospheres (<19.5%).

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colorless.	Odor	Odorless.
Odor Threshold	No information available	Physical State	Compressed gas
Flash Point	Not flammable.	Autoignition Temperature	No information available.
Decomposition Temperature	No information available.	Boiling Point/Boiling Range	(Sublimes) -78.5 °C / -109.3 °F
Freezing Point	-56.6 °C / -69.8 °F	Molecular Weight	44.01
Water Solubility	0.145 g/ml @ 25°C	Evaporation Rate	No information available
Vapor Pressure	856 PSIA @ 70°F	Vapor Density	1.53 at 70°F (air = 1)
VOC Content (%)	Not applicable.	Flammability Limits in Air	
		Upper	Not applicable
		Lower	Not applicable

10. STABILITY AND REACTIVITY

Stability	Stable.
Incompatible Products	Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diammino may ignite. Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode.
Conditions to Avoid	Due to the presence of Carbon dioxide, Carbonic acid is formed in the presence of moisture.
Hazardous Decomposition Products	Carbon monoxide (CO). Oxygen.
Hazardous Polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral:	No information available.
LD50 Dermal:	No information available.
LC50 Inhalation:	No information available.
Inhalation	Acidosis, adrenal cortical exhaustion, and other metabolic stresses have resulted from prolonged continuous exposure to 1-2% carbon dioxide (10,000 ppm-20,000 ppm). The ACGIH TLV of 5,000 ppm is expected to provide a good margin of safety from asphyxiation and undue metabolic stress provided sufficient oxygen levels are maintained in the air. Increased physical activity, duration of exposure, and decreased oxygen content can affect systemic and respiratory effects resulting from exposure to carbon dioxide.
Repeated Dose Toxicity	Chronic, harmful effects are not known from repeated inhalation of low (3-5 molar%) concentrations.

Chronic Toxicity

Chronic Toxicity	Chronic harmful effects are not known from repeated inhalation of concentrations below PEL/TLV.
Carcinogenicity	Contains no ingredient listed as a carcinogen.

Irritation	No information available.
Sensitization	No information available.
Reproductive Toxicity	No information available.
Developmental Toxicity	Oxygen deficiency during pregnancy has produced developmental abnormalities in humans and experimental animals.
Synergistic Materials	None known.
Target Organ Effects	Central vascular system (CVS). Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ozone depletion potential; ODP; (R-11 = 1): Does not contain ozone depleting chemical (40 CFR Part 82).

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Do not attempt to dispose of residual waste or unused quantities. Return in the shipping container PROPERLY LABELED WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Linde for proper disposal.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Carbon dioxide
Hazard Class	2.2
UN-Number	UN1013
Description	UN1013, Carbon dioxide, 2.2
Emergency Response Guide Number	120

TDG

Proper Shipping Name	Carbon dioxide
Hazard Class	2.2
UN-Number	UN1013
Description	UN1013, CARBON DIOXIDE, 2.2

MEX

Proper Shipping Name	Carbon dioxide
Hazard Class	2.2
UN-Number	UN1013
Description	UN1013, Carbon dioxide, 2.2

IATA

UN-Number	UN1013
Proper Shipping Name	Carbon dioxide
Hazard Class	2.2
ERG Code	2L
Description	UN1013, Carbon dioxide, 2.2
Maximum Quantity for Passenger	75 kg
Maximum Quantity for Cargo Only	150 kg
Limited Quantity	No information available.

IMDG/IMO

Proper Shipping Name	Carbon dioxide
Hazard Class	2.2
UN-Number	UN1013
EmS No.	F-C, S-V
Description	UN1013, Carbon dioxide, 2.2

ADR

Proper Shipping Name	Carbon dioxide
Hazard Class	2.2
UN-Number	UN1013
Classification Code	2A
Description	UN1013, Carbon dioxide, 2.2

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies
EINECS/ELINCS	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	No

Clean Water Act
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (*40 CFR 122.21 and 40 CFR 122.42*).

Risk and Process Safety Management Programs
This material, as supplied, does not contain any regulated substances with specified thresholds under 40 CFR Part 68.
This product does not contain any substances regulated as Highly Hazardous Chemicals pursuant to the 29 CFR Part 1910.110.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

CERCLA/SARA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Carbon dioxide	X	X	X	-	X

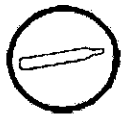
International Regulations

Chemical Name	Carcinogen Status	Exposure Limits
Carbon dioxide	-	Mexico: TWA= 5000 ppm Mexico: TWA= 9000 mg/m³ Mexico: STEL= 15000 ppm Mexico: STEL= 27000 mg/m³

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
A Compressed gases



Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	05-Mar-2010
Revision Date	12-Sep-2013
Revision Number	2
Revision Note	Not applicable.

NFPA	Health Hazard 2	Flammability 0	Stability 0	Physical and Chemical Hazards Simple asphyxiant
HMIS	Health Hazard 1	Flammability 0	Physical Hazard 3	Personal Protection -

Note: Ratings were assigned in accordance with Compressed Gas Association (CGA) guidelines as published in CGA Pamphlet P-19-2009, CGA Recommended Hazard Ratings for Compressed Gases, 3rd Edition.

End of Safety Data Sheet

HAZARDOUS CHEMICAL MATERIAL SAFETY DATA SHEET
(Conforms to the requirements of 29 CFR 1910.1200)

I. PRODUCT IDENTITY: Cartridge, Ansul P/N 54919

CARTRIDGE ACTUATED DEVICES, INC.
123 Clinton Rd.
Fairfield, NJ 07004

Prepared by, Peter J. Hefferan 5/18/90 Rev. N/R

Emergency Telephone Number: (201) 575-1312

Material(s) desribed is/are: Electro Pyrotechnic Cartridge and by-products of combustion.

II. HAZARDOUS INGREDIENTS & EXPOSURE LIMITS: N/A

Chemical and common name of Hazardous Chemical ingredients:

Nitroglycerin	55-63-0
Nitro cellulose	90004-70-0
Potassium Perchlorate	7778-74-7
Lead Thiocyanate	592-87-0

III. PHYSICAL AND CHEMICAL CHARACTERISTICS:

Boiling point	N/A	Solubility in water	N/A
Specific gravity	N/A	Specific Gravity	N/A
Vapor pressure	Negligible	pH	N/A
% Volatile	Negligible	Evaporation Rate	N/A

IV. FIRE, EXPLOSION & REACTIVITY HAZARD DATA

DANGER Extremely Flammable -EXPLOSIVE-
Keep away from heat and keep shunted

Flash point	N/A	Flammable limits	N/A

Autoignition temperature	225°F
Extinguishing Media	Water, CO_2
Special Fire-Fighting procedures	None
Grounding Procedure	Keep Cartridge Shunted When Handling
Stability Considerations	Stable
Incompatibility	None if cartridge remains intact
Hazardous decomposition products	None
Hazardous products of combustion	Flame, High heat, in small quantities Carbon Monoxide, carbon dioxide, nitrogen oxides, Hydrogen cyanide, lead oxide, & hydrochloric acid.
Hazardous polymerization	None

V. HEALTH HAZARD DATA:

Emergency & First Aid Procedures
Treat burns and any laceration by cleaning and applying sterile bandages. Transport individual for further medical treatment.

Primery Route of Entry	N/A
Cancer information	Not listed as carcinogen by N.T.P/ NA if cartridge remains intact.
Reported effects of humans	N/A
Other	N/A

VI. SPILL & LEAK PROCEDURE:

Steps to be taken if material is spilled:

Clean spill after liberally wetting down with solvent (acetone, Butyl Acetate or alcohol) by wiping material up with paper towels or with cotton rag. Keep a fire extinguisher present.

Waste Disposal Method:

Burn in the open in an isolated location. Remotely ignite with slow burning train or electricly initiated squib. Disposal must be in accordance with local, state and Federal regulations.

Call Cartridge Actuated Devices for assistance if needed.

VII. APPLICABLE CONTROL MEASURES:

Appropriate Hygenic Practices:	N/A
Personal Protective Equipment:	Safety glasses grounding devices: (ground straps and/or conductive footware).
Work Practices:	Avoid high temperatures. Keep the Cartridge shunted & wear protective equipment.
Handling & Storage precautions:	Recommended Storage, 70°F, Kaep Shunted
Engineering Controls	Keep shunted until installed
Protective measures during repair & maintenance	Eliminated static discharge sources. Avoid flame or high heat. Shield device when working on or around the cartridge.

DISCLAIMER: The above information taken from various published and unpublished sources is believed to be accurate and represent the best information currently available to us. However, we make no warranty of the accuracy of such information express or implied, and assume no liability resulting from is use. Users should make their own investigation to determine suitability of the information for their particular purpose.

UA1GPC7 Performance +
Shipping container from Label Master

UN4G Box

.07 grams - pyrotechnics

HAZARD DATA SHEET
CARTRIDGE
ANSUL P/N 54919

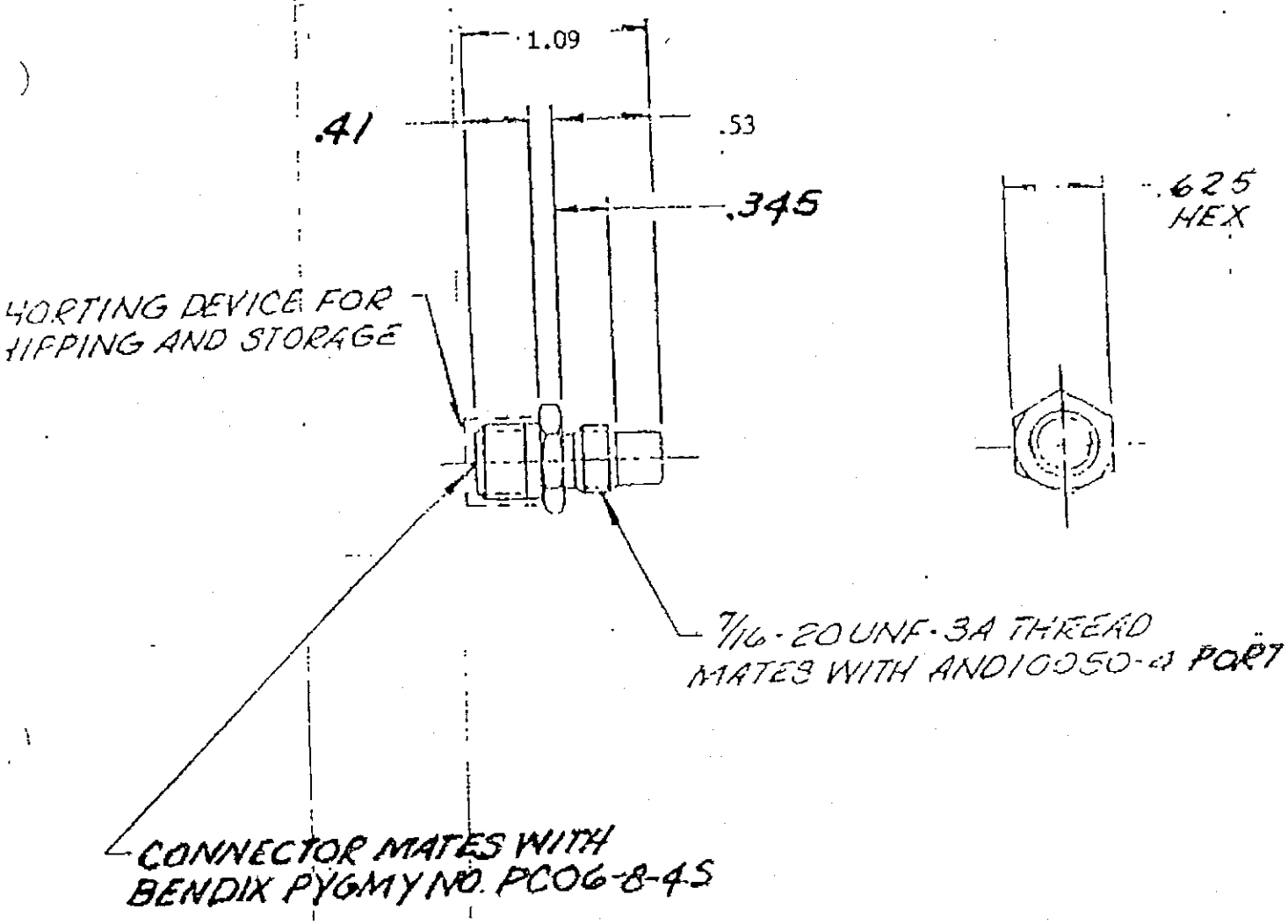
This is an electrically fired cartridge, containing (2) different explosive materials.

Ignition Charge= 35 milligrams of a Pyrotechnic material, ignition mix.
Main Charge= 38 milligrams of output composition.

The connector pins are shunted together for shipping & handling and should remain shunted until cartridge is installed in system. This cartridge should be handled and stored as small arms ammunition and must never be exposed to heat above 165°F, keep fire away.

If this cartridge were to fire while held in your hand serious injury would result.

Ouput products similar to discharge of small arms blank ammunition.
Always wear safety glasses while handling this type of device.



SAFETY CONSIDERATIONS FOR HANDLING PYROTECHNIC DEVICES

1. Shunt (shorting device) should only be removed prior to connection to system, or if bridgewire resistance is to be measured. Shunt should be replaced immediately after measurement of bridgewire resistance.

2. If bridgewire resistance is to be measured, the instrument used must not be capable of delivering sufficient energy to fire the device. A typical instrument used by Cartridge Actuated Devices, Inc. is a Kiethley Model 503 milliolummeter which limits current to about 10 ma. As an added safety precaution, the devices should be barricaded from the operator during bridgewire test.

3. If dielectric or insulation resistance is to be measured, the following precautions should be observed:

   (a) Only measurements between case and pins (leads) should be taken.

   (b) Check for zero voltage prior to connection of device to instrument.

   (c) Before applying voltage, make certain that device is suitably barricaded.

4. Loaded devices are susceptible to firing by electro-static energy. To preclude this, attach operator to a common ground with the device, by use of a ground strap.

5. Unless done under Lab conditions by qualified personnel, do not test for No-Fire or All Fire current values. (These tests are considered destructive).

6. Store device in a limited access, secured area, away from materials which are flammable. For storage purposes, precaution should be the same as would be used to store small arms ammunition.

7. The device should not be subjected to temperatures in excess of 175°F.

8. THIS DEVICE IS FIRED BY ELECTRICAL ENERGY (CURRENT). PRIOR TO CONNECTION OF DEVICE TO YOUR SYSTEM, CHECK FOR ZERO CURRENT IN YOUR SYSTEM.

9. This device, if stimulated with current in excess of the No-Fire energy, can fire even if current is induced. For this reason, make certain the firing leads are electrically isolated from all other electrical lines.

ENVIRONMENTAL

TEMPERATURE (OPERATE / STORAGE)	-54° C TO 74o C / -65° F TO 165o F
MOISTURE (HUMIDITY & WATER)	WATERPROOF TO 32 PT.

Fike Protection Systems
Division Fike Corporation
704 South 10th Street, P.O. Box 610, Blue Springs, Missouri 64013-0610

HAZARDOUS CHEMICAL MATERIAL SAFETY DATA SHEET
(Conforms to the requirements of 29 CFR 1910.1200)

I. PRODUCT IDENTITY: Cartridges, power device 1 . 4s UN0323 P.G. II
(Cartridge Assembly P/N 074055, EX9609043)
Fike P/N 70-1651
Fike P/N 02-4134

THIS UNIT IS NOT USER SERVICEABLE. DO NOT ATTEMPT DISASSEMBLING

Fike Protection Systems
704 S. 10th Street
Blue Springs, MO 64013-0610

24 HOUR EMERGENCY PHONE #
Chemtrec
1-800-424-9300

Prepared by E. Charles Ellis

Material (s) described is/are: Electro-Pyrotechnic device and by-products of initiation. Net reactive material content - 1.5 grams each

II HAZARDOUS INGREDIENTS AND EXPOSURE LIMITS: N/A

Chemical and common name of Hazardous chemical ingredients:

	CAS. No.
Nitroglycerin	0055-83-0
Nitrocellulose	9004-70-0
Potassium Perchlorate	7778-74-7
Lead Thiocyanate	592-87-0

III. PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling point: N/A
Solubility in water: negligible
Specific gravity: N/A
Vapor Pressure : N/D
% Volatile: NIL

IV. FIRE, EXPLOSION AND REACTIVITY HAZARD DATA

DANGER Extremely Flammable --EXPLOSIVE-- Keep away from heat and keep shunted

Flash point	Flammable limits
Auto-ignition Temperature	325°F
Extinguisher Media	Dry, Chemical extinguisher
Special Fire-Fighting procedures:	None
Grounding Procedure:	Insure that the device is shunted and handlers are grounded

Fike Protection Systems
Division Fike Corporation
704 South 10th Street, P.O. Box 610, Blue Springs, Missouri 64013-0610

Stability Considerations:	None
Incompatibility:	Shock, flame, friction, temperature high heat and static sources.
Hazardous decomposition products:	None
Hazardous products of combustion:	High temperature flame, carbon monoxide, carbon dioxide of nitrogen oxides, hydrogen chloride, and barium oxides.
Hazardous Polymerization:	None

V. HEALTH HAZARD DATA:

Emergency and First Aid Procedure:

Treat burns and any laceration by cleaning and applying sterile bandages. Transport individual for further medical treatment.

Primary Route of Entry:	Inhalation of gas after initiation
Cancer Information:	None
Reported effects on Humans:	Respiratory irritant
Other:	None

VI SPILL AND LEAK PROCEDURES:

Steps to be taken if material is spilled: (applies only if cartridge is ruptured)
Clean spill after liberally wetting down with solvent (acetone, Butyl Acetate or alcohol) by wiping material up with paper towels or with a cotton rag. Do not use rag of synthetic materials that may generate static charge build up. Keep a fire extinguisher present.

Waste Disposal Method:

Disposal must be in accordance with local, state, and Federal regulations. Call Fike Protection Systems for assistance, if needed.

VII. APPLICABLE CONTROL MEASURES:

Appropriate Hygienic Practices:	N/A
Personal Protective Equipment:	Safety glasses and grounding devices (ground straps and/or conductive footwear). When firefighting, wear NIOSH approved gas respirator.
Work Practices:	Avoid high temperatures. Keep the cartridge shunted and wear protective equipment.
Handling and Storage Precaution:	Recommended storage, 70°F., keep shunted.

Fike Protection Systems
Division Fike Corporation
704 South 10th Street, P.O. Box 610, Blue Springs, Missouri 64013-0610

Protective Measures during Repair and Maintenance:	Eliminate static discharge sources. Avoid flame or high heat. Shield device when working with it. Shunt across proper pairs of bridge wires prior to removal from system.

Revision Date: May, 1999

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**4C-5842**
Product Name:	CAT BLACK PAINT FLAT AEROSOL 12UC
Product Use:	Paint product.
Print date:	29/Mar/2013
Revision Date:	18/Jan/2013

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-851-7000
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Kidney injury may occur.
- Causes headache, drowsiness or other effects to the central nervous system.
- Liver injury may occur.
- Cardiac arrhythmias
- Blood disorders

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- Prolonged exposure over TLV may produce pneumoconiosis.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	15 - 20	Propane
BUTYL ACETATE 123-86-4	5 - 10	n-Butyl acetate
XYLENE 1330-20-7	5 - 10	Xylenes (o-, m-, p- isomers)
PROPRIETARY INERT	5 - 10	PROPRIETARY INERT
ETHYLBENZENE 100-41-4	1 - 5	Ethyl benzene
NAPHTHA 64742-89-8	1 - 5	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5	Carbon black

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear safety glasses or goggles to protect against exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA 710 mg/m^3 TWA		
XYLENE 1330-20-7	5 - 10	100 ppm TWA 435 mg/m^3 TWA		
PROPRIETARY INERT	5 - 10	Respirable. Listed. Total dust. Listed.		
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5	3.5 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA Aliphatic hydrocarbon gases: Alkane C1-C4			
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA	200 ppm STEL		
XYLENE 1330-20-7	5 - 10	100 ppm TWA	150 ppm STEL		
PROPRIETARY INERT	5 - 10	2 mg/m^3 TWA particulate matter containing no asbestos and <1% crystalline silica, respirable fraction			
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA	125 ppm STEL		
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5	3.5 mg/m^3 TWA			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68ºF (20ºC)
Vapor density (air = 1.0):	4
Boiling point:	-44ºF (-42ºC)
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.58
Specific Gravity:	.79
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Silicon dioxide. Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
BUTYL ACETATE 123-86-4	5 - 10	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
XYLENE 1330-20-7	5 - 10	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
ETHYLBENZENE 100-41-4	1 - 5	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat
NAPHTHA 64742-89-8	1 - 5	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. IARC has classified carbon black as possibly carcinogenic to humans (Group 2B).

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	1 - 5		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
ETHYLBENZENE 100-41-4	1 - 5			Monograph 77 [2000]
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5			Monograph 65 [1996]

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	1 - 5	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans
C.I. PIGMENT BLACK 7 1333-86-4	1 - 5	Present		

12. ECOLOGICAL DATA

12. ECOLOGICAL DATA
No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation

UN ID Number (msds):	CONCOM
Proper Shipping Name:	CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1

International Maritime Organization (IMO):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1
Marine Pollutant	No

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40			5000
BUTYL ACETATE 123-86-4	5 - 10			5000
XYLENE 1330-20-7	5 - 10		form R reporting required for 1.0% de minimis concentration	100
ETHYLBENZENE 100-41-4	1 - 5		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	no
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

ETHYLBENZENE	100-41-4
XYLENE	1330-20-7
NAPHTHA	64742-89-8
BUTYL ACETATE	123-86-4
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6
PROPRIETARY INERT	Trade Secret
C.I. PIGMENT BLACK 7	1333-86-4

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	29/Mar/2013
Revision Date:	18/Jan/2013

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**4C-5843**
Product Name:	CAT BLACK PAINT HIGH GLOSS AEROSOL 12UC
Product Use:	Paint product.
Print date:	29/Mar/2013
Revision Date:	18/Jan/2013

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-851-7000
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation
- Risk of serious damage to eyes.

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Dermatitis
- Can be absorbed through skin.
- May cause sensitization by skin contact.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Harmful if swallowed.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- May cause sensitization by inhalation.
- May cause bronchopneumonia or bronchitis.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Kidney injury may occur.
- Liver injury may occur.
- Causes headache, drowsiness or other effects to the central nervous system.
- Blood disorders
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- Possible sensitization.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	15 - 20	Propane
XYLENE 1330-20-7	10 - 15	Xylenes (o-, m-, p- isomers)
BUTYL ACETATE 123-86-4	1 - 5	n-Butyl acetate
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
ETHYLBENZENE 100-41-4	1 - 5	Ethyl benzene
1,2,4-TRIMETHYLBENZENE 95-63-6	1 - 5	1,2,4-Trimethylbenzene
AROMATIC NAPHTHA, HEAVY 64742-94-5	1 - 5	Solvent naphtha, petroleum, heavy arom.
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Carbon black

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

NAPHTHALENE 91-20-3	.1 - 1	Naphthalene
COBALT OCTOATE 136-52-7	.1 - 1	Hexanoic acid, 2-ethyl-, cobalt(2+) salt

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
XYLENE 1330-20-7	10 - 15	100 ppm TWA 435 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA 710 mg/m^3 TWA		

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA		
NAPHTHALENE 91-20-3	.1 - 1	10 ppm TWA 50 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA Aliphatic hydrocarbon gases: Alkane C1-C4			
XYLENE 1330-20-7	10 - 15	100 ppm TWA	150 ppm STEL		
BUTYL ACETATE 123-86-4	1 - 5	150 ppm TWA	200 ppm STEL		
ETHYLBENZENE 100-41-4	1 - 5	100 ppm TWA	125 ppm STEL		
1,2,4-TRIMETHYLBENZENE 95-63-6	1 - 5	25 PPM			
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA			
NAPHTHALENE 91-20-3	.1 - 1	10 ppm TWA	15 ppm STEL		CAN BE ABSORBED THROUGH THE SKIN

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68ºF (20ºC)
Vapor density (air = 1.0):	4.7
Boiling point:	-44ºF (-42ºC)
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.49
Specific Gravity:	.78
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
XYLENE 1330-20-7	10 - 15	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
BUTYL ACETATE 123-86-4	1 - 5	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
ETHYLBENZENE 100-41-4	1 - 5	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat
1,2,4-TRIMETHYLBENZENE 95-63-6	1 - 5	= 18 g/m^3 Inhalation LC50 Rat 4 h = 3400 mg/kg Oral LD50 Rat > 3160 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, HEAVY 64742-94-5	1 - 5	> 2000 mg/kg Dermal LD50 Rabbit > 5000 mg/kg Oral LD50 Rat > 590 mg/m^3 Inhalation LC50 Rat 4 h
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit
NAPHTHALENE 91-20-3	.1 - 1	= 490 mg/kg Oral LD50 Rat > 20 g/kg Dermal LD50 Rabbit > 2500 mg/kg Dermal LD50 Rat > 340 mg/m^3 Inhalation LC50 Rat 1 h

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. IARC has classified carbon black as possibly carcinogenic to humans (Group 2B). The International Agency For Research On Cancer (IARC) has determined that Cobalt and Cobalt Compounds are substances that are possibly carcinogenic to humans (IARC group 2B).

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	1 - 5		Listed. initial date 6/11/04 - carcinogen
NAPHTHALENE 91-20-3	.1 - 1		Listed. initial date 4/19/02 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
ETHYLBENZENE 100-41-4	1 - 5			Monograph 77 [2000]
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1			Monograph 65 [1996]
NAPHTHALENE 91-20-3	.1 - 1			Monograph 82 [2002]
COBALT OCTOATE 136-52-7	.1 - 1			Monograph 52 [1991]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens
NAPHTHALENE 91-20-3	.1 - 1		Reasonably Anticipated To Be A Human Carcinogen

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
ETHYLBENZENE 100-41-4	1 - 5	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Present		
NAPHTHALENE 91-20-3	.1 - 1	Present		
COBALT OCTOATE 136-52-7	.1 - 1	Present		

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation

UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1

International Maritime Organization (IMO):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1
Marine Pollutant	No

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40			5000
XYLENE 1330-20-7	10 - 15		form R reporting required for 1.0% de minimis concentration	100
BUTYL ACETATE 123-86-4	1 - 5			5000
ETHYLBENZENE 100-41-4	1 - 5		form R reporting required for 1.0% de minimis concentration	1000
1,2,4-TRIMETHYLBENZENE 95-63-6	1 - 5		Listed.	
NAPHTHALENE 91-20-3	.1 - 1		form R reporting required for 1.0% de minimis concentration	100
COBALT OCTOATE 136-52-7	.1 - 1		YES	10

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTYL ACETATE	123-86-4
ETHYLBENZENE	100-41-4
XYLENE	1330-20-7
AROMATIC NAPHTHA, LIGHT	64742-95-6
1,2,4-TRIMETHYLBENZENE	95-63-6
AROMATIC NAPHTHA, HEAVY	64742-94-5
PROPANE	74-98-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING: This product contains chemicals known to the State of California to cause cancer.

Rule 66 status of product Photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:
Prepared By: Regulatory Affairs Department

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**4C-4198**
Product Name:	CAT BLACK PAINT MEDIUM GLOSS AEROSOL 12UC
Product Use:	Paint product.
Print date:	29/Mar/2013
Revision Date:	05/Jan/2013

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-851-7000
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- May cause defatting of the skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Causes headache, drowsiness or other effects to the central nervous system.
- Kidney injury may occur.
- Cardiac arrhythmias
- Blood disorders
- Liver injury may occur.

This product contains ingredients that may contribute to the following potential chronic health effects:
- Prolonged exposure over TLV may produce pneumoconiosis.
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	15 - 20	Propane
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
NAPHTHA 64742-89-8	5 - 10	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
PROPRIETARY INERT	1 - 5	PROPRIETARY INERT
PROPRIETARY INERT	1 - 5	PROPRIETARY INERT
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Carbon black

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear safety glasses or goggles to protect against exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
Usual industrial work clothes.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
PROPRIETARY INERT	1 - 5	5 mg/m^3 Respirable fraction. 15 mg/m^3 Total dust.		
PROPRIETARY INERT	1 - 5	Respirable. Listed. Total dust. Listed.		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA Aliphatic hydrocarbon gases: Alkane C1-C4			
PROPRIETARY INERT	1 - 5	10 mg/m^3 The value is for particulate matter containing no asbestos and <1% crystalline silica.			

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
PROPRIETARY INERT	1 - 5	2 mg/m^3 TWA particulate matter containing no asbestos and <1% crystalline silica, respirable fraction			
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68ºF (20ºC)
Vapor density (air = 1.0):	5.5
Boiling point:	-44ºF (-42ºC)
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.39
Specific Gravity:	.77
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
NAPHTHA 64742-89-8	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse

11. TOXICOLOGICAL INFORMATION

PROPRIETARY INERT	1 - 5	= 6450 mg/kg Oral LD50 Rat
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

IARC has classified carbon black as possibly carcinogenic to humans (Group 2B).

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1			Monograph 65 [1996]

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Present		

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation

UN ID Number (msds):	CONCOM
Proper Shipping Name:	CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1

International Maritime Organization (IMO):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1
Marine Pollutant	No

15. REGULATORY INFORMATION

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	35 - 40			5000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

NAPHTHA	64742-89-8
PROPRIETARY INERT	Trade Secret
PROPRIETARY INERT	Trade Secret
NAPHTHA	64742-88-7
PROPANE	74-98-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret
PROPRIETARY RESIN	Trade Secret

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	29/Mar/2013
Revision Date:	05/Jan/2013

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Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**4C-4200**
Product Name:	CAT YELLOW PAINT HIGH GLOSS 12UC
Product Use:	Paint product.
Print date:	19/Apr/2013
Revision Date:	19/Apr/2013

Company Identification
The Valspar Corporation
PO Box 1461
Minneapolis, MN 55440

Manufacturer's Phone:	1-612-851-7000
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation
- Risk of serious damage to eyes.

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Liver injury may occur.
- Cardiac arrhythmias
- Causes headache, drowsiness or other effects to the central nervous system.
- Kidney injury may occur.
- Blood disorders

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Teratogens:
- May cause birth defects.
- Female reproductive toxin.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	Acetone
PROPANE 74-98-6	15 - 20	Propane
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
NAPHTHA 64742-89-8	5 - 10	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
TOLUENE 108-88-3	1 - 5	Toluene
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:

Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:

Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

Skin protection:

Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:

Usual industrial work clothes. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection:

If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation

Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
TOLUENE 108-88-3	1 - 5	200 ppm TWA	= 300 ppm Ceiling	
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m^3 TWA dust total		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	500 ppm TWA	750 ppm STEL		

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
PROPANE 74-98-6	15 - 20	1000 ppm TWA Aliphatic hydrocarbon gases: Alkane C1-C4			
TOLUENE 108-88-3	1 - 5	20 ppm TWA			Can be absorbed through the skin.
TITANIUM DIOXIDE 13463-67-7	1 - 5	10 mg/m³ TWA			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	-44°F (-42°C)
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.53
Specific Gravity:	.78
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide. Metal oxide fumes.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat

11. TOXICOLOGICAL INFORMATION

NAPHTHA 64742-89-8	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse
TOLUENE 108-88-3	1 - 5	= 12.5 mg/L Inhalation LC50 Rat 4 h = 12124 mg/kg Dermal LD50 Rat = 636 mg/kg Oral LD50 Rat = 8390 mg/kg Dermal LD50 Rabbit > 26700 ppm Inhalation LC50 Rat 1 h
TITANIUM DIOXIDE 13463-67-7	1 - 5	> 10000 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

May cause birth defects. Female reproductive toxin.

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Developmental Toxicity	California Prop 65 - Reproductive (Male)
TOLUENE 108-88-3	1 - 5	Listed. initial date 1/1/91 - developmental toxicity	

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
TOLUENE 108-88-3	1 - 5	Listed. Initial date 8/1/09 - female reproductive toxicity	

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	1 - 5			Monograph 47 [1989]

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	1 - 5	Present		

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation

UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

14. TRANSPORTATION INFORMATION

U.S Hazmat and/or International DG shipment exceptions

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1

International Maritime Organization (IMO):

UN/ID No:	UN1950
Proper shipping name:	AEROSOLS, FLAMMABLE
Hazard Class:	2.1
Marine Pollutant	No

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	35 - 40			5000
TOLUENE 108-88-3	1 - 5		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:

The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

TITANIUM DIOXIDE	13463-67-7
TOLUENE	108-88-3
NAPHTHA	64742-88-7
NAPHTHA	64742-89-8
PROPANE	74-98-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1

Additional Non-Hazardous Materials

PROPRIETARY COLOR PIGMENT	Trade Secret
PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING: This product contains chemicals known to the State of California to cause birth defects or other reproductive harm.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	19/Apr/2013
Revision Date:	19/Apr/2013

MATERIAL SAFETY DATA SHEET
(CAUSTIC SODA)

I. PRODUCT IDENTIFICATION

Chemical Name : Sodium Hydroxide
Trade Name : Caustic Soda, 50 %
Synonyms : Liquid Caustic Soda, Caustic, Soda Lye, Lye Solution

II. COMPOSITION / INGREDIENTS

Sodium Hydroxide, % : 48 – 52 % by weight
Chemical Formula : NaOH
Molecular Weight : 40 g/mole
CAS Registry No. : 1310-73-2

III. HAZARDS IDENTIFICATION

THIS PRODUCT MAY BE : corrosive, toxic and a major potential hazard upon contact to skin and eyes.
TOXICITY ROUTES OF EXPOSURE : Ingestion can cause severe burning and pain in lips, mouth, tongue, throat and stomach. Death can result from ingestion.
OVEREXPOSURE : Causes burns and scarring. Can cause serious damage to all body tissues contacted.

CANCER INFORMATION : Not applicable
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Chronic eye or skin conditions

IV. FIRST AID MEASURES

SKIN : Remove contaminated clothing and immediately wash skin for a minimum of 15 minutes. Call or see a physician.
EYES : Immediately flush eyes with large amount of water, occasionally lifting the upper and lower eyelids and rotating the eyeballs. Continue flushing for a minimum of 15 minutes. See a physician.
INHALATION : Remove to fresh air. If breathing stops, administer artificial respiration. See a physician.
INGESTION : DO NOT induce vomiting. If person is conscious, give 2 or more glasses of water. If unconscious, never give anything by mouth. See a physician immediately.

V. FIRE FIGHTING MEASURES

Autoignition Point : Not Applicable
Flammability/Explosive limits : Not Applicable
Fire/Explosion Hazards: Contact with strong acids may generate enough heat to ignite combustibles.
Fire Prevention : Not Applicable

VI. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR RELEASE : Completely contain spilled material with dikes, sandbags, etc., and prevent run off into the ground or surface waters or sewers. Recover as much caustic material as possible into containers for disposal. Add water and neutralize remaining caustic material with dilute hydrochloric acid, citric acid or another solid acidic material to a pH between 6 and 9. Collect neutralized caustic with a dry sorbent. Flush residual neutralized waste to the drain with excess water.

VII. HANDLING AND STORAGE

Storage Requirements: Keep container tightly closed.
FOR SMALL VOLUMES : Maybe stored in plastic jugs.
FOR LARGE VOLUMES ; Store in steel storage tanks.
INCOMPATIBLE MATERIALS : Store away from acids. (Refer to Section X)

VIII. EXPOSURE CONTROLS AND PROTECTION

Adequate ventilation needed. TLV C : 2 mg/m^3
Protective Equipment for the eyes and skin :
Goggles, respirator, disposable latex/ rubber apron, PVC rain suit, rubber boots with pant legs over boots.
Precautionary Hygiene/control measures :
Avoid contact with skin, eyes, and clothing.
Do not breathe mist or vapor. Wash thoroughly after handling. Safety showers and eye wash fountains should be available in storage and handling area.

IX. PHYSICAL AND CHEMICAL PROPERTIES

STATE	:	liquid
APPEARANCE	:	colorless or slightly turbid
ODOR	:	Irritating
pH	:	Strong base >14
BOILING POINT	:	145 ^{0}C for ~50% NaOH Solution
FLASH POINT	;	Not determined
SPECIFIC GRAVITY	:	1.51-1.54
VAPOR PRESSURE	:	~6.3 mm Hg @ 40^{0}C
SOLUBILITY IN	:	WATER: miscible, ACID : miscible

MATERIAL SAFETY DATA SHEET
(CAUSTIC SODA)

X. STABILITY AND REACTIVITY

Stable under normal handling conditions. Materials and conditions to avoid (incompatibility) are:

- Chlorinated hydrocarbons, acetaldehyde, acrolein, aluminum, chlorine triflouride, hydroquinone, maleic anhydride, and phosphorous pentoxide.
- Dilution with water evolves large quantity of heat.

Hazardous decomposition & combustion product = none
Hazardous polymerization will not occur.

XI. TOXICOLOGICAL INFORMATION

Effects from skin contact – Contact with skin can cause severe burns with deep ulcerations. Contact with solution or mist can cause multiple burns with temporary loss of hair at burn site.

Effects from eye contact – Liquid in the eye can cause severe destruction and blindness. These effects can occur rapidly affecting all parts of the eye. Mist can cause irritation with high concentration causing destructive burns.

XII. ECOLOGICAL INFORMATION

ECOTOXICITY DATA : High basicity may pose potential hazard to plant and marine life.

XIII. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all Government and Local regulations.

XIV. TRANSPORT INFORMATION

Transportation of Dangerous Goods
TDG Classification: Do not ship by air.
DOT Hazard Classification: Class 8 : Corrosive
DOT Shipping Name : Sodium Hydroxide ID: UN1824

XV. REGULATORY INFORMATION

No data available

XVI OTHER INFORMATION

This MSDS contains information under the sixteen (16) section headings written in accordance with the International Standard ISO 11014 *"Safety Data Sheet for Chemical Products".*

MATERIAL SAFETY DATA SHEET

Commercial ABC Dry Chemical (Fire Extinguishing Agent)

A UTC Fire & Security Company

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Commercial ABC Dry Chemical (Fire Extinguishing Agent)
Other Trade Names	Multi-Purpose, Ammonium Phosphate, Monoammonium Phosphate
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	February 9, 2009

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
See Section 11 - Toxicity

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Monoammonium Phosphate	7722-76-1 EC#2317645	55 - 65%	None	None
Ammonium Sulfate	7783-20-2 EC#2319841	30 - 40%	None	None
Mica	12001-26-2	1 - 4%	None	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Clay	8031-18-3	<2%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<0.1%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Powder
Color	Pale Yellow
Odor	Odorless
Specific Gravity	Not available
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid
Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Polymerization
Will not occur.

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products
Oxides of carbon - ammonia - oxides of phosphorus - nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Mica and clay may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

NOTE: For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at www.badgerfire.com.

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 30 - 40%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 30 - 40%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

15. REGULATORY INFORMATION

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

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if it matters, we're on it.®

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**059.TY25661.076**
Product Name:	CONSTRUC CHARCOAL 6UC
Product Use:	Paint product.
Print date:	10/Apr/2012
Revision Date:	28/Feb/2012

Company Identification
The Valspar Corporation
1000 Lake Road
Medina, OH 44256

Manufacturer's Phone:	1-330-725-4511
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation
- Risk of serious damage to eyes.

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Kidney injury may occur.
- Cardiac arrhythmias
- Causes headache, drowsiness or other effects to the central nervous system.
- Blood disorders
- Liver injury may occur.

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Teratogens:
- May cause birth defects.
- Female reproductive toxin.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
NAPHTHA 64742-88-7	10 - 15	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
PROPANE 74-98-6	10 - 15	Propane
BUTANE 106-97-8	5 - 10	Butane
NAPHTHA 64742-89-8	1 - 5	SOLVENT NAPHTHA, PETROLEUM, LIGHT ALIPH
TITANIUM DIOXIDE 13463-67-7	1 - 5	Titanium dioxide
XYLENE 1330-20-7	1 - 5	Xylenes (o-, m-, p- isomers)
TOLUENE 108-88-3	1 - 5	Toluene
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Carbon black
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear chemical goggles with splash shields or face shield. Contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of an eye injury in case of exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	10 - 15	1000 ppm TWA 1800 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	1 - 5	15 mg/m^3 TWA dust total		
XYLENE 1330-20-7	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
TOLUENE 108-88-3	1 - 5	200 ppm TWA	= 300 ppm Ceiling	
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	10 - 15	1000 ppm TWA			
BUTANE 106-97-8	5 - 10	1000 ppm TWA			
TITANIUM DIOXIDE 13463-67-7	1 - 5	10 mg/m^3 TWA			
XYLENE 1330-20-7	1 - 5	100 ppm TWA	150 ppm STEL		
TOLUENE 108-88-3	1 - 5	20 ppm TWA			Can be absorbed through the skin.
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	3.5 mg/m^3 TWA			
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.56
Specific Gravity:	.79
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-100
Flash point (Celsius):	-73
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.

Sensitivity to static discharge: Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s

11. TOXICOLOGICAL INFORMATION

DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
NAPHTHA 64742-88-7	10 - 15	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
PROPANE 74-98-6	10 - 15	= 658 mg/L Inhalation LC50 Rat 4 h
BUTANE 106-97-8	5 - 10	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-89-8	1 - 5	= 3000 mg/kg Dermal LD50 Rabbit = 5000 mg/kg Oral LD50 Mouse
TITANIUM DIOXIDE 13463-67-7	1 - 5	> 10000 mg/kg Oral LD50 Rat
XYLENE 1330-20-7	1 - 5	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
TOLUENE 108-88-3	1 - 5	= 12.5 mg/L Inhalation LC50 Rat 4 h = 12124 mg/kg Dermal LD50 Rat = 636 mg/kg Oral LD50 Rat = 8390 mg/kg Dermal LD50 Rabbit > 26700 ppm Inhalation LC50 Rat 1 h
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	> 15400 mg/kg Oral LD50 Rat > 3 g/kg Dermal LD50 Rabbit
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

May cause birth defects. Female reproductive toxin.

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA. IARC has classified carbon black as possibly carcinogenic to humans (Group 2B).

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Developmental Toxicity	California Prop 65 - Reproductive (Male)
TOLUENE 108-88-3	1 - 5	Listed. initial date 1/1/91 - developmental toxicity	

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
TOLUENE 108-88-3	1 - 5	Listed. Initial date 8/1/09 - female reproductive toxicity	
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	1 - 5			Monograph 47 [1989]
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1			Monograph 65 [1996]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	10 - 15			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence
TITANIUM DIOXIDE 13463-67-7	1 - 5			male rat-negative; female rat-negative; male mice-negative; female mice-negative
XYLENE 1330-20-7	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
TOLUENE 108-88-3	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	1 - 5	Present		
C.I. PIGMENT BLACK 7 1333-86-4	.1 - 1	Present		
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation

UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions

The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):

UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):

IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35			5000
XYLENE 1330-20-7	1 - 5		form R reporting required for 1.0% de minimis concentration	100
TOLUENE 108-88-3	1 - 5		form R reporting required for 1.0% de minimis concentration	1000
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute: yes
Chronic: yes
Flammability: no
Reactivity: no
Sudden Pressure: yes

U.S. STATE REGULATIONS:

Right to Know:

The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTANE	106-97-8
TOLUENE	108-88-3
XYLENE	1330-20-7
TITANIUM DIOXIDE	13463-67-7
NAPHTHA	64742-88-7
NAPHTHA	64742-89-8
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	10/Apr/2012
Revision Date:	28/Feb/2012

EASY-ARC®

Date:	1/14/2011	MSDS No.:	US-M650A
Trade Name:	EasyArc 7018 MR		
Sizes:	All		
Supersedes:	4/14/2008		

MATERIAL SAFETY DATA SHEET

For Welding Consumables and Related Products

Conforms to Hazard Communication Standard 29CFR 1910.1200 Rev. October 1988

SECTION I - IDENTIFICATION

Manufacturer/ Supplier: The Lincoln Electric Company
22801 St. Clair Avenue
Cleveland, OH 44117-1199
(216) 481-8100

Product Type: Covered Electrode

Classification: AWS E7018-H4R

SECTION II - HAZARDOUS MATERIAL (1)

IMPORTANT!

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered by Section V; see it for industrial hygiene information.
CAS Number shown is representative for the ingredients listed. All ingredients listed may not be present in all sizes.
(1) The term "hazardous" in "Hazardous Materials" should be interpreted as a term required and defined in the Hazards Communication Standard and does not necessarily imply the existence of any hazard. All materials are listed on the TSCA inventory.

Ingredients:	CAS No.	Wt.%	TLV mg/m^3	PEL mg/m^3
Iron	7439-89-6	15	10*	15*
Limestone and/or calcium carbonate	1317-65-3	10	10*	15
Fluorides (as F)	7789-75-5	< 5	2.5	2.5
Silicates and other binders	1344-09-8	< 5	10*	15*
Titanium dioxides	13463-67-7	< 5	10	15
Manganese and/or manganese alloys and compounds (as Mn)*****	7439-96-5	< 5	0.2	5 (c)
Mineral silicates	1332-58-7	1	5**	5**
Silicon and/or silicon alloys and compounds (as Si)	7440-21-3	1	10*	15*
Iron oxides	65996-74-9	0.5	5	10
Quartz	14808-60-7	0.5	#0.025**	#0.1**
Lithium compounds (as Li)	554-13-2	< 0.5	10*	15*
Carbon steel core wire	7439-89-6	55	10*	15*

Supplemental Information:

(*) Not listed. The OSHA PEL for nuisance particles is 15 milligrams per cubic meter. The ACGIH guideline for total particulate is 10 milligrams per cubic meter. PEL value for iron oxide is 10 milligrams per cubic meter. TLV value for iron oxides is 5 milligrams per cubic meter.

(**) As respirable dust.

(*****) Subject to the reporting requirements of Sections 311, 312, and 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40CFR 370 and 372.

(c) Value is for manganese fume. Present PEL is 5 milligrams per cubic meter (ceiling value). Values proposed by OSHA in 1989 were 1.0 milligrams per cubic meter TWA and 3.0 milligrams per cubic meter STEL (Short Term Exposure Limit).

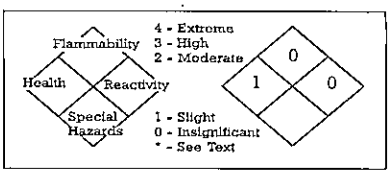
(#) Crystalline silica (quartz) is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a carcinogenic risk to humans.

SECTION III - HAZARD DATA

Non Flammable; Welding arc and sparks can ignite combustibles and flammable products. See Z49.1 referenced in Section VI.
Product is inert, no special handling or spill procedures required. Not regulated by DOT.

(CONTINUED ON SIDE TWO)

Product:	EasyArc 7018 MR
Date:	1/14/2011



SECTION IV - HEALTH HAZARD DATA

Threshold Limit Value: The ACGIH recommended general limit for Welding Fume NOS - (Not Otherwise Specified) is 5 mg/m³. ACGIH-1999 preface states that the TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations. See Section V for specific fume constituents which may modify this TLV. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists. Units are milligrams per cubic meter of air.

Effects of Overexposure: Electric arc welding may create one or more of the following health hazards:
Fumes and Gases can be dangerous to your health. Common entry is by inhalation. Other possible routes are skin contact and ingestion.

Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to welding fumes can lead to siderosis (iron deposits in lung) and may affect pulmonary function. Manganese overexposure can affect the central nervous system, resulting in impaired speech and movement. Bronchitis and some lung fibrosis have been reported. Repeated exposure to fluorides may cause excessive calcification of the bone and calcification of ligaments of the ribs, pelvis and spinal column. May cause skin rash. Titanium dioxide is listed on the IARC (International Agency for Research on Cancer) as a Group 2B carcinogen (possibly carcinogenic to humans based on animal studies). Respiratory exposure to the crystalline silica present in this welding electrode is not anticipated during normal use. Respiratory overexposure to airborne crystalline silica is known to cause silicosis, a form of disabling pulmonary fibrosis which can be progressive and may lead to death. Crystalline silica is on the IARC (International Agency for Research on Cancer) and NTP (National Toxicology Program) lists as posing a cancer risk to humans. WARNING: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

Arc Rays can injure eyes and burn skin. *Skin cancer has been reported.*
Electric Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with workpiece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Emergency and First Aid Procedures: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.
IF BREATHING IS DIFFICULT give oxygen. IF NOT BREATHING employ CPR (Cardiopulmonary Resuscitation) techniques.
IN CASE OF ELECTRICAL SHOCK, turn off power and follow recommended treatment. In all cases call a physician.

SECTION V - REACTIVITY DATA

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.)

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section II, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include: Primarily iron oxide and fluorides; secondarily complex oxides of manganese, potassium, silicon, and sodium.

Maximum fume exposure guideline for this product (based on manganese content) is 3.0 milligrams per cubic meter.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

SECTION VI AND VII
CONTROL MEASURES AND PRECAUTIONS FOR SAFE HANDLING AND USE

Read and understand the manufacturer's instruction and the precautionary label on the product. Request Lincoln Safety Publication E205. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL, 33126 (both available for free download at http://www.lincolnelectric.com/community/safety/) and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954 for more details on many of the following:

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. *Keep exposure as low as possible.*

Respiratory Protection: Use respirable fume respirator or air supplied respirator when welding in confined space or general work area when local exhaust or ventilation does not keep exposure below TLV.

Eye Protection: Wear helmet or use face shield with filter lens shade number 12 or darker. Shield others by providing screens and flash goggles.

Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate from work and ground.

Disposal Information: Discard any product, residue, disposable container, or liner as ordinary waste in an environmentally acceptable manner according to Federal, State and Local Regulations unless otherwise noted. No applicable ecological information available.

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number	031
Product name	Crazy Clean
Effective date	29-Feb-2008
Company information	Sprayway, Inc. 484 Vista Ave. Addison, IL 60101 United States
Company phone	General Assistance 630-543-7600
Emergency telephone US	800-424-9300
Emergency telephone outside US	703-527-3887
Version #	1.0
Supersedes date	09-Nov-2007

2. Hazards Identification

Emergency overview

Aerosol. CONTENTS UNDER PRESSURE.

Harmful in contact with eyes.

OSHA regulatory status

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Eyes

Contact may irritate or burn eyes. Eye contact may result in corneal injury.

Skin

This product may be harmful if it is absorbed through the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

Inhalation

Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Prolonged inhalation may be harmful.

Ingestion

Exposure by ingestion of an aerosol is unlikely. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause delayed lung damage.

Target organs

Kidney.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged and may cause blood damage. These effects have not been observed in humans.

Blood. Central nervous system. Liver. Respiratory system.

Chronic effects

Conjunctiva. Liver injury may occur. Kidney injury may occur. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. May cause delayed lung damage.

Signs and symptoms

Corneal damage. Narcosis. Liver enlargement. Conjunctivitis. Defatting of the skin. Irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
2-Butoxyethanol	111-76-2	3 - 5
n-Butane	106-97-8	3 - 5
Non-hazardous and other components below reportable levels		> 90

4. First Aid Measures

First aid procedures

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Skin contact

Wash off with warm water and soap. Get medical attention if irritation develops or persists.

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Ingestion	Have victim rinse mouth thoroughly with water. Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Notes to physician	Symptoms may be delayed.
General advice	Call a physician if symptoms develop or persist.

5. Fire Fighting Measures

Flammable properties	Containers may explode when heated. Vapor or gas may spread to distant ignition sources and flash back.
Extinguishing media	
Suitable extinguishing media	Large Fires: Water spray, fog or regular foam. Small Fires: Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Protection of firefighters	
Protective equipment and precautions for firefighters	In the event of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Containers should be cooled with water to prevent vapor pressure build up. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

6. Accidental Release Measures

Personal precautions	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away.
Methods for containment	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly.

7. Handling and Storage

Handling	Pressurized container: Do not pierce or burn, even after use. Do not handle or store near an open flame, heat or other sources of ignition. Do not use if spray button is missing or defective. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure.
Storage	Level 1 Aerosol. Contents under pressure. Do not puncture, incinerate or crush. The pressure in sealed containers can increase under the influence of heat. Avoid exposure to long periods of sunlight. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH

Components	CAS #	TWA	STEL	Ceiling
2-Butoxyethanol	111-76-2	20 ppm	Not established	Not established
n-Butane	106-97-8	1000 ppm	Not established	Not established

OSHA

Components	CAS #	TWA	STEL	Ceiling
2-Butoxyethanol	111-76-2	50 ppm	Not established	Not established

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Wear chemical goggles.
Skin protection	Protective gloves.

Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygeine considerations	When using do not smoke. Avoid contact with eyes. Avoid contact with skin. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	Not available
Color	Pale yellow
Odor	Pleasant.
Physical state	Liquid.
Form	Aerosol.
Flammability (HOC)	2.83 kJ/g estimated
Flash back	No
Pressure	46 - 56 psig @70F
Solubility	Partially
Flash point	-156 °F (-104.4 °C) estimated
Boiling point	213.8 °F (101.1 °C) estimated
Specific gravity	0.9786 estimated
pH	11.61 - 12.61

10. Chemical Stability & Reactivity Information

Chemical stability	Risk of ignition. Stable at normal conditions.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	None known.
Hazardous decomposition products	May include oxides of oxides of carbon.

11. Toxicological Information

Acute effects	Acute LD50: 8624 mg/kg estimated, Rat, Oral Acute LD50: 4536 mg/kg estimated, Rat, Dermal Acute LC50: 40 mg/l/4h estimated, Rat, Inhalation
Sensitization	Not expected to be hazardous by OSHA criteria.
Local effects	Contact may irritate or burn eyes. Liver toxicity. Blood disorder may occur after ingestion. Components of the product may be absorbed into the body through the skin.
Chronic effects	Hazardous by OSHA criteria. This product may be harmful if it is absorbed through the skin. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects. 2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Subchronic effects	Kidney injury may occur. Blood disorder may occur after prolonged inhalation. Blood disorder may occur after prolonged skin contact.
Neurological effects	Hazardous by OSHA criteria.
Mutagenicity	Not expected to be hazardous by OSHA criteria.
Reproductive effects	Not expected to be hazardous by OSHA criteria.
Teratogenicity	Not expected to be hazardous by OSHA criteria.
Epidemiology	Hazardous by OSHA criteria.

12. Ecological Information

Ecotoxicity	LC50 1122 mg/L, Fish, 96.00 Hours, EC50 43836 mg/L, Daphnia, 48.00 Hours, IC50 88.19 mg/L, Algae, 72.00 Hours, Components of this product have been identified as having potential environmental concerns.

13. Disposal Considerations

Waste codes	D001: Waste Flammable material with a flash point <140 F

Disposal instructions	Contents under pressure. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Basic shipping requirements:	
Proper shipping name	Consumer commodity
Hazard class	ORM-D
Subsidiary hazard class	None
Additional information:	
Packaging exceptions	156, 306
Packaging non bulk	156, 306
Packaging bulk	None

IMDG

Basic shipping requirements:	
Proper shipping name	AEROSOLS, flammable
Hazard class	2.1
UN number	1950
Additional information:	
Packaging exceptions	LTD QTY
Item	5F
Labels required	2.1
Transport Category	2

IATA

Basic shipping requirements:	
Proper shipping name	Aerosols, flammable
Hazard class	2.1
UN number	1950
Additional information:	
Packaging exceptions	LTD QTY

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical	Yes

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

U.S. - Pennsylvania - RTK (Right to Know) List

2-Butoxyethanol	111-76-2	Present
n-Butane	106-97-8	Present

16. Other Information

HMIS® ratings

Health: 1*
Flammability: 2
Physical hazard: 0
Personal protection: X

Prepared by

Regulatory Compliance

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

29-Feb-2008

Material Safety Data Sheet

DuPont™ FE-227® fire extinguishing agent

Version 2.1

Revision Date 07/11/2011 Ref. 130000000215

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ FE-227® fire extinguishing agent
Tradename/Synonym	:	FM-200 2-Hydroperfluoropropane Propane, 1,1,1,2,3,3,3-Heptafluoro- HFC-227eaHP 2-Hydroheptafluoropropane Heptafluoropropane 2-H-heptafluoropropane 1,1,1,2,3,3,3-Heptafluoropropane R-227 R227 HFC-227ea
MSDS Number	:	130000000215
Product Use	:	Fire extinguishing agent
Manufacturer	:	DuPont 1007 Market Street Wilmington, DE 19898
Product Information	:	1-800-441-7515 (outside the U.S. 1-302-774-1000)
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Misuse or intentional inhalation abuse may lead to death without warning.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Rapid evaporation of the liquid may cause frostbite.

Potential Health Effects

Skin : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Eyes : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Inhalation : Misuse or intentional inhalation abuse may cause death without warning symptoms, due to cardiac effects.
Other symptoms potentially related to misuse or inhalation abuse are: Anaesthetic effects, Light-headedness, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Carcinogenicity
None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
1,1,1,2,3,3,3-Heptafluoropropane	431-89-0	100 %

SECTION 4. FIRST AID MEASURES

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Take off all contaminated clothing immediately. Consult a physician. Wash contaminated clothing before re-use. Treat for frostbite if necessary by gently warming affected area.

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if necessary.

Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

Ingestion	:	Is not considered a potential route of exposure.
General advice	:	Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.
Notes to physician	:	Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIREFIGHTING MEASURES

Fire and Explosion Hazard	:	The product is not flammable. Hazardous decomposition products : Hydrogen fluoride, Carbonyl fluoride
Suitable extinguishing media	:	This material is a fire extinguishing agent.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Keep upwind of leak - evacuate until gas has dispersed.
Spill Cleanup	:	Ventilate area using forced ventilation, especially low or enclosed places where heavy vapors might collect.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Do not breathe gas. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8. Wash hands thoroughly after handling. Wash clothing after use. Decomposition will occur when product comes in contact with open flame or electrical heating elements. Handle in accordance with good industrial hygiene and safety practice.

Storage	:	Valve protection caps and valve outlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Keep container tightly closed in a dry and well-ventilated place. Store in original container. Protect from contamination. Avoid area where salt or other corrosive materials are present.
Storage temperature	:	< 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	:	Use only with adequate ventilation. Keep container tightly closed.
Personal protective equipment		
Respiratory protection	:	Wear NIOSH approved respiratory protection as appropriate.
Hand protection	:	Additional protection: Impervious gloves
Eye protection	:	Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material.
Skin and body protection	:	Where there is potential for skin contact, have available and wear as appropriate, impervious gloves, apron, pants, jacket, hood and boots.
Protective measures	:	Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines

Exposure Limit Values

1,1,1,2,3,3,3-Heptafluoropropane

AEL *	(DUPONT)	1,000 ppm	8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Liquefied gas
Odor	:	none
Melting point/range	:	-131 °C (-204 °F)
Boiling point	:	-16.3 °C (2.7 °F)
Vapour Pressure	:	4,547 hPa at 25 °C (77 °F)
Density	:	1.388 g/cm3 at 25 °C (77 °F) (as liquid)

SECTION 10. STABILITY AND REACTIVITY

Stability	:	Stable at normal temperatures and storage conditions.
Incompatibility	:	Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	:	Hazardous decomposition products , Hydrogen fluoride , Carbonyl fluoride, Carbon monoxide, Carbon dioxide
Hazardous reactions	:	Polymerization will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ FE-227® fire extinguishing agent

Inhalation 4 h LC50	:	> 788698 ppm , rat
Inhalation	:	dog Cardiac sensitization
Dermal	:	not applicable
Skin irritation	:	No skin irritation, Not tested on animals Not expected to cause skin irritation based on expert review of the properties of the substance.

Eye irritation	:	No eye irritation, Not tested on animals Not expected to cause eye irritation based on expert review of the properties of the substance.
Sensitisation	:	Does not cause skin sensitization., Not tested on animals Not expected to cause sensitization based on expert review of the properties of the substance. Did not cause sensitization on laboratory animals. There are no reports of human respiratory sensitization.
Repeated dose toxicity	:	Inhalation rat No toxicologically significant effects were found.
Carcinogenicity	:	Overall weight of evidence indicates that the substance is not carcinogenic.
Mutagenicity	:	Did not cause genetic damage in animals. Did not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.
Reproductive toxicity	:	Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	:	Animal testing showed no developmental toxicity.
Further information	:	Cardiac sensitisation threshold limit : 730190 mg/m3

1,1,1,2,3,3,3-Heptafluoropropane

Oral	:	not applicable

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

DuPont™ FE-227® fire extinguishing agent

96 h LC50	:	Danio rerio (zebra fish) > 200 mg/l Information given is based on data obtained from similar substances.

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 81.8 mg/l Information given is based on data obtained from similar substances.
72 h EC50	:	Pseudokirchneriella subcapitata > 114 mg/l Information given is based on data obtained from similar substances.
72 h EC50	:	Pseudokirchneriella subcapitata > 118 mg/l Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) > 200 mg/l Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) > 97.9 mg/l Information given is based on data obtained from similar substances.

Environmental Fate

DuPont™ FE-227® fire extinguishing agent

Biodegradability aerobic	:	1 % OECD Test Guideline 301 Not readily biodegradable.
Biodegradability aerobic	:	5 % OECD Test Guideline 301 Not readily biodegradable.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	Can be used after re-conditioning. Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
Environmental Hazards	:	Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	:	3296
	Proper shipping name	:	Heptafluoropropane
	Class	:	2.2
	Labelling No.	:	2.2

IATA_C	UN number	: 3296
	Proper shipping name	: Heptafluoropropane
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3296
	Proper shipping name	: Heptafluoropropane
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

SARA 313 Regulated Chemical(s)	: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
California Prop. 65	: Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

		HMIS
Health	:	1
Flammability	:	0
Reactivity/Physical hazard	:	0
PPE	:	Personal Protection rating to be supplied by user depending on use conditions.

Before use read DuPont's safety information.
For further information contact the local DuPont office or DuPont's nominated distributors.
® DuPont's registered trademark

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the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Significant change from previous version is denoted with a double bar.

Material Safety Data Sheet

DuPont™ FE-25® fire extinguishing agent

Version 2.0

Revision Date 10/22/2010 Ref. 130000000363

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	DuPont™ FE-25® fire extinguishing agent
MSDS Number	:	130000000363
Product Use	:	Fire extinguishing agent
Manufacturer	:	DuPont 1007 Market Street Wilmington, DE 19898
Product Information	:	1-302-774-1000
Medical Emergency	:	1-800-441-3637 (outside the U.S. 1-302-774-1139)
Transport Emergency	:	CHEMTREC: 1-800-424-9300 (outside the U.S. 1-703-527-3887)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Rapid evaporation of the liquid may cause frostbite.

Potential Health Effects

Skin

Pentafluoroethane : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Eyes

Pentafluoroethane : Contact with liquid or refrigerated gas can cause cold burns and frostbite.

Inhalation

Pentafluoroethane : May cause: Central nervous system depression, Anaesthetic effects, dizziness, confusion, incoordination, drowsiness, or unconsciousness, irregular heartbeat with a strange sensation in the chest, heart thumping, apprehension, feeling of fainting, dizziness or weakness.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Pentafluoroethane	354-33-6	100 %

SECTION 4. FIRST AID MEASURES

Skin contact : Take off all contaminated clothing immediately. Flush area with lukewarm water. Do not use hot water. If frostbite has occurred, call a physician.

Eye contact : In case of eye contact Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Inhalation : Remove from exposure, lie down. Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary. Consult a physician.

Ingestion : Is not considered a potential route of exposure.

General advice : Never give anything by mouth to an unconscious person. When symptoms persist or in all cases of doubt seek medical advice.

Notes to physician : Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, that may be used in situations of emergency life support should be used with special caution.

SECTION 5. FIRE-FIGHTING MEASURES

Flammable Properties

Flash point	:	does not flash
Lower explosion limit	:	Method : None per ASTM E681
Upper explosion limit	:	Method : None per ASTM E681
Fire and Explosion Hazard	:	pressure build-up Hazardous thermal decomposition products: Carbon oxides Hydrogen fluoride Carbonyl fluoride Fluorocarbons
Firefighting Instructions	:	In the event of fire, wear self-contained breathing apparatus. Wear neoprene gloves during cleaning up work after a fire. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.
Spill Cleanup	:	Evaporates.
Accidental Release Measures	:	Should not be released into the environment.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Avoid breathing vapours or mist. Avoid contact with skin, eyes and clothing. Provide sufficient air exchange and/or exhaust in work rooms. For personal

protection see section 8.
Handle in accordance with good industrial hygiene and safety practice.

Handling (Physical Aspects) : No special protective measures against fire required.

Storage : Valve protection caps and valve cutlet threaded plugs must remain in place unless container is secured with valve outlet piped to use point.
Do not drag, slide or roll cylinders. Never attempt to lift cylinder by its cap. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over.
Separate full containers from empty containers. Keep at temperature not exceeding 52°C. Do not store near combustible materials. Keep container tightly closed in a dry and well-ventilated place. Store in original container. Protect from contamination.

Storage temperature : < 52 °C (< 126 °F)

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls : Ensure adequate ventilation, especially in confined areas. Local exhaust should be used when large amounts are released.

Personal protective equipment
Respiratory protection : For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Hand protection : Additional protection: Impervious gloves

Eye protection : Safety glasses with side-shields Additionally wear a face shield where the possibility exists for face contact due to splashing, spraying or airborne contact with this material. Wear safety glasses or coverall chemical splash goggles.

Protective measures : Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guidelines
Exposure Limit Values
Pentafluoroethane
AEL * (DUPONT) 1,000 ppm 8 & 12 hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Liquefied gas
Color	:	colourless
Odor	:	ether-like
Boiling point	:	-48.1 °C (-54.6 °F) at 1,013 hPa
% Volatile	:	100 %
Vapour Pressure	:	13,779 hPa at 25 °C (77 °F)
Density	:	1.22 g/cm3 at 20 °C (68 °F) (as liquid)
Water solubility	:	0.9 g/l at 25 °C (77 °F) at 1,013 hPa
Vapour density	:	4.2 (Air = 1.0)

SECTION 10. STABILITY AND REACTIVITY

Stability	:	Stable under recommended storage conditions.
Conditions to avoid	:	The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen, the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.
Incompatibility	:	Alkali metals Alkaline earth metals, Powdered metals, Powdered metal salts
Hazardous decomposition products	:	Hazardous thermal decomposition products: Carbon oxides, Hydrogen fluoride, Carbonyl fluoride, Fluorocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

DuPont™ FE-25® fire extinguishing agent

Carcinogenicity	:	Animal testing did not show any carcinogenic effects.
Reproductive toxicity	:	Did not show mutagenic or teratogenic effects in animal experiments.

Further information	:	Cardiac sensitisation threshold limit : > 245400 mg/m3 Anaesthetic effects threshold limit : 490800 mg/m3 Rapid evaporation of the liquid may cause frostbite.

Pentafluoroethane

Inhalation 4 h LC50	:	800000 ppm , rat Cardiac sensitization
Repeated dose toxicity	:	Inhalation rat No toxicologically significant effects were found.
Mutagenicity	:	Did not cause genetic damage in animals. Did not cause genetic damage in cultured mammalian cells. Did not cause genetic damage in cultured bacterial cells.
Teratogenicity	:	Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	Recover by distillation or remove to a permitted waste disposal facility. Comply with applicable Federal, State/Provincial and Local Regulations.
Environmental Hazards	:	Empty pressure vessels should be returned to the supplier.

SECTION 14. TRANSPORT INFORMATION

DOT	UN number	: 3220
	Proper shipping name	: Pentafluoroethane
	Class	: 2.2
	Labelling No.	: 2.2
IATA_C	UN number	: 3220

DuPont™ FE-25® fire extinguishing agent

Version 2.0

Revision Date 10/22/2010 Ref. 130000000363

	Proper shipping name	: Pentafluoroethane
	Class	: 2.2
	Labelling No.	: 2.2
IMDG	UN number	: 3220
	Proper shipping name	: Pentafluoroethane
	Class	: 2.2
	Labelling No.	: 2.2

SECTION 15. REGULATORY INFORMATION

California Prop. 65 : Chemicals known to the State of California to cause cancer, birth defects or any other harm: none known

SECTION 16. OTHER INFORMATION

Before use read DuPont's safety information.
For further information contact the local DuPont office or DuPont's nominated distributors.
® DuPont's registered trademark

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Significant change from previous version is denoted with a double bar.

ANSUL

MATERIAL SAFETY DATA SHEET

FE-36

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	FE-36
Version #	01
Revision date	01-08-2014
CAS #	690-39-1
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Contents under pressure. Heat may cause the containers to explode.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Eyes	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.
Skin	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.
Inhalation	Severe overexposure may cause cardiac sensitization and result in irregular rhythm. Intentional misuse by concentrating and inhaling the product can be harmful or fatal.
Ingestion	Not a likely route of entry.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
1,1,1,3,3,3-HEXAFLUOROPROPANE (HFC-236FA)	690-39-1	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Flush thoroughly with water for at least 15 minutes. Get medical assistance.
Skin contact	Wash frost-bitten areas with plenty of water. Do not remove clothing. Get medical attention if irritation persists after washing.
Inhalation	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Ingestion	Not likely, due to the form of the product.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters	
Specific hazards arising from the chemical	*Contents under pressure.* Pressurized container may explode when exposed to heat or flame.
Specific methods	None known.

6. Accidental Release Measures

Personal precautions	None known.
Environmental precautions	No special environmental precautions required.
Methods for containment	Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Not applicable.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	When using do not smoke. All equipment used when handling the product must be grounded. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight.
Storage	Contents under pressure. Keep away from heat and sources of ignition. Keep at temperature not exceeding 49 °C. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Keep out of the reach of children.

8. Exposure Controls / Personal Protection

Engineering controls	General ventilation normally adequate.
Personal protective equipment	
Eye / face protection	Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Liquefied gas.
Color	Colorless.
Odor	Odorless.
Physical state	Gas.
pH	Not available.
Melting point	-144.4 °F (-98 °C)
Freezing point	-153.4 °F (-103 °C)
Boiling point	30.2 °F (-1.4 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	272.4 kPa
Vapor density	Not available.
Specific gravity	1.37
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

Molecular formula	C3H2F6

10. Chemical Stability & Reactivity Information

Incompatible materials	This product may react with strong reducing agents. and Alkaline metals.

11. Toxicological Information

12. Ecological Information

Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN3163
Proper shipping name	Liquefied gas, n.o.s. (1,1,1,3,3,3-Hexafluoropropane)
Hazard class	2.2
Additional information:	
ERG number	126

DOT

15. Regulatory Information

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 1
Flammability: 0
Instability: 0

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date
01-08-2014

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"FE-36"
Chemical Name:	1,1,1,3,3,3-Hexafluoropropane.
CAS No.:	690-39-1.
Chemical Formula:	$C_3H_2F_6$.
EINECS Number:	425-320-1.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	PYRO-CHEM
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.pyrochem.com
Date of Issue:	September, 2003

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1. Ingredient Name:	1,1,1,3,3,3-Hexafluoropropane.
Chemical Formula:	$C_3H_2F_6$.
CAS No.:	690-39-1.
EINECS Number:	425-320-1.
Concentration, Wt %:	100 %.
Hazard Identification:	See Heading 3.

2.2. (i) There are NO substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3)of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.

(ii) There are NO substances for which there are Community workplace exposure limits, which are not already included in (i) above.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.
Limit Values for Exposure:		None established.
		AEL*: 1000 ppm, 8 and 12 hour TWA (DuPont).

[*AEL is DuPont's acceptable exposure limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.]

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:

Acute Exposure:	
Eye Contact:	"Frostbite-like" effects may occur if the liquid or escaping vapors contact the eyes.
Skin Contact:	Frostbite can occur if liquid or escaping vapor contacts the skin.
Inhalation:	Based on animal data, this material may cause suffocation (if air is displaced by vapors), irregular heart beat with a strange sensation in the chest, "heart thumping", apprehension, lightheadedness, feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death.
Ingestion:	Ingestion is not likely to occur since this material is a gas at room temperature.
Chronic Overexposure:	No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: This material may make the heart more susceptible to arrhythmias.

FOR ENVIRONMENT:
Do not allow to enter public sewers and watercourses. See Heading 12.

4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes while holding lids open. Get medical attention. Treat for frostbite if necessary.
Skin Contact:	Flush areas with lukewarm water. If frostbite has occurred do not use hot water. Get medical attention.
Inhalation:	Immediately remove victim to fresh air, keep person calm. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.
Ingestion:	Not applicable.

NOTES TO PHYSICIANS: The use of epinephrine (adrenaline) or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of substances.

5. FIRE-FIGHTING MEASURES

This substance is an extinguishing media.

There are NO extinguishing media which must not be used for safety reasons.

Though gas cylinders are equipped with pressure and temperature relief devices, they should be removed from high temperatures of fire or cooled with water to avoid risk of rupture.

Substance evolves toxic fumes, fire-fighters should wear self-contained breathing apparatus.

See Heading 10.3 for decomposition products.

Do not allow reentry into areas where this substance has been released without first ventilating to remove products of combustion/decomposition.

6. ACCIDENTAL RELEASE MEASURES

Evacuate the area and ventilate. Do not enter areas where high concentrations may exist (especially confined or poorly ventilated areas) without appropriate protective equipment including a self-contained breathing apparatus.

For personal protection: Prevent direct skin and eye contact, see Heading 8.

Clean up: Allow substance to evaporate.

Do not allow to enter public sewers and watercourses. See Heading 12.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.

Use the same precautions as in handling any cryogenic gas.

See incompatibility information in Heading 10.

7.2. Storage

Store in a cool, dry, well-ventilated area.

See incompatibility information in Heading 10.

Store in original container. Keep tightly closed until used.

When the material is used as a firefighting agent in fixed or portable extinguishing systems, follow manufacturer's instructions for inspection, maintenance, repair, and operation.

Do not allow to enter public sewers and watercourses. See Heading 12.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

There are NO currently occupational exposure limit values for this substance.

8.2. Exposure controls

8.2.1. Occupational exposure controls

Use local ventilation to minimize exposure to the substance.

Use mechanical ventilation for general area control.

8.2.1.1. Respiratory protection

Wear an approved self-contained breathing apparatus in emergency situations.

8.2.1.2. Hand protection

Use lined neoprene gloves when handling the liquid.

8.2.1.3. Eye protection

Wear chemical goggles when handling liquid.

8.2.1.4. Skin protection

Standard fire fighting equipment should provide all protection which is necessary.

8.2.2. Environmental exposure controls

Do not allow to enter public sewers and watercourses. See Heading 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Colorless gas or liquefied gas.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	–1.4 °C.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	272.4 kPa at 25 °C (39.9 psia).
Relative Density (Water = 1):	1.370.
Solubility:	
– Water solubility:	Negligible.
– Fat solubility:	Not determined.
Partition coefficient, n-octanol/water:	Not determined.
Viscosity:	Not determined.
Vapor density (Air = 1):	>1.
Evaporation rate (Butyl Acetate):	Not determined.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

Strong bases and metallic sodium, potassium, or lithium.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will NOT occur.

Combustion or decomposition products include hydrogen fluoride, carbon monoxide, and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Toxicity Data: Inhalation (rat) ALC: >189,000 ppm/4 hrs.

Direct contact with eyes or skin by liquid can cause frost-bite.

Single exposure caused: Narcosis. Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine (NOAEL, 10%; LOAEL, 15%).

Repeated exposure caused: No significant toxicological effects.
No-Observed-Adverse-Effect-Level (NOAEL): 20,000 ppm.

CARCINOGENIC, DEVELOPMENTAL, REPRODUCTIVE, MUTAGENIC EFFECTS: Limited studies do not suggest developmental toxicity. Specific studies to evaluate the effect on female reproductive performance have not been conduct; however, limited information obtained from studies on developmental toxicity do not indicate adverse effects on female reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures. No animal data are available to define the carcinogenicity of this material .

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity
Not determined.

12.2. Mobility
Not determined.

12.3. Persistence and degradability
Not determined.

12.4. Bioaccumulative potential
Not determined.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	None

13. DISPOSAL CONSIDERATIONS

Non-contaminated product is reclaimable.

Do not allow to enter public sewers and watercourses. See Heading 12.

Dispose of waste in an approved chemical incinerator equipped with a scrubber in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Proper Shipping Name:	Hexafluoropropane.
Hazard Class or Division:	2.2.
UN ID Number:	UN3296
Label:	Nonflammable gas.

For additional transport information, contact Pyro-Chem.

Do not allow to enter public sewers and watercourses. See Heading 12.

15. REGULATORY INFORMATION

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.
Limit Values for Exposure:		None established.
		AEL*: 1000 ppm, 8 and 12 hour TWA (DuPont).

[*AEL is DuPont's acceptable exposure limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.]

EINECS Status: All components are included in EINECS inventories or are exempt from listing.
EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	1	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **Class A – Compressed gas.**

Format is from directive 2001/58/EC.
EINECS data is from http://exb.jrc.it/existing-chemicals/
Data used to compile the data sheet is from Pyro-Chem Material Safety Data Sheet, January, 2002.

The EC listing information was obtained from DuPont Company.
A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. PYRO-CHEM SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"Fire Extinguisher ABC Multipurpose Dry Chemical" "Fire Extinguisher Powder ABC Multipurpose"
Chemical Name:	N/A – This is a mixture/preparation.
CAS No.:	N/A – This is a mixture/preparation.
Chemical Formula:	N/A – This is a mixture/preparation.
EINECS Number:	N/A – This is a mixture/preparation.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	May, 2004

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.

Ingredient Name:	Monoammonium Phosphate.
Chemical Formula:	$NH_4H_2PO_4$.
CAS No.:	7722-76-1.
EINECS Number:	231-764-5.
Concentration, Wt %:	50-80 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Ammonium sulfate
Chemical Formula:	$(NH_4)_2SO_4$.
CAS No.:	7783-20-2.
EINECS Number:	231-984-1.
Concentration, Wt %:	20-45 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth)
Chemical Formula:	$Mg_xAl_y(SiO4)_z$.
CAS No.:	8031-18-3.
EINECS Number:	(a).
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Tricalcium Phosphate (Pentacalcium Hydroxide Tris(orthophosphate)).
Chemical Formula:	$Ca_5(OH)(PO_4)_3$.
CAS No.:	12167-74-7.
EINECS Number:	235-330-6.
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Silica Gel.
Chemical Formula:	$-[OSi(O)]-(H_2O)_x$.
CAS No.:	112926-00-8.
EINECS Number:	(b).
Concentration, Wt %:	0-3 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Methyl Hydrogen Polysiloxane.
Chemical Formula:	Mixture/preparation.
CAS No.:	63148-57-2.
EINECS Number:	(b).
Concentration, Wt %:	0-1 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Yellow Pigment
Chemical Formula:	$C_{34}H_{30}Cl_2N_6O_4$.
CAS No.:	5468-75-7.
EINECS Number:	226-789-3
Concentration, Wt %:	<1 %.
Hazard Identification:	See Heading 3.

Fire Extinguishers contain compressed air to ensure a high velocity discharge of product.

(a) EINICS does not include most naturally occurring raw materials. See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

(b) EINICS does not include synthetic polymers (These are registered in EINICS under their building blocks, monomers.). See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive 1999/45/EC.]

3. HAZARDS IDENTIFICATION

FOR HUMANS:

Product:

EU Classification:		Harmful.
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Components:

Monoammonium Phosphate:

EU Classification:		Harmful.
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Ammonium sulfate:

EU Classification:		Irritant.
R Phrases:	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Limit Values for Exposure:

Nuisance dust limit:

OSHA TWA:	15 mg/m^3
ACGIH TLV-TWA	10 mg/m^3

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

Silica Gel is a Synthetic Amorphous Silica which is considered a nuisance dust and no medical conditions are abnormally aggravated by this product.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	Mildly irritating for short periods of time.
Skin Contact:	May be mildly irritating.
Inhalation:	Treat as a mineral dust. Irritant to the respiratory tract. Transient cough, and shortness of breath may occur.
Ingestion:	Not an expected route of entry.

Chronic Overexposure:

Inhalation:	Chronic fibrosis of the lung, pneumoconiosis.

Medical Conditions Generally Aggravated by Exposure: None known.

FOR ENVIRONMENT:

No data available.

4. FIRST AID MEASURES

Eye Contact:	Wash with water for a minimum of 15 minutes. If irritation persists seek medical attention.
Skin Contact:	Wash affected area with soap and water. If irritation persists seek medical attention.
Inhalation:	Remove from exposure. If irritation persists seek medical attention.
Ingestion:	If patient is conscious, give large amounts of water and induce vomiting. Seek medical help.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.
There are NO extinguishing media which must not be used for safety reasons.
NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.
Clean up: Sweep up and recover for use or place in closed container for disposal, see Heading 13.
NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
See incompatibility information in Heading 10.

7.2. Storage

NO special conditions are needed for safe storage.
See incompatibility information in Heading 10.
Store in original container or Flag Fire fire extinguisher. Keep tightly closed until used.
There is minimal danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Nuisance dust limit:

OSHA TWA:	15 mg/m^3
ACGIH TLV-TWA:	10 mg/m^3

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Dust mask where dustiness is prevalent, or TLV is exceeded. Use mechanical filter respirator if exposure is prolonged.

8.2.1.2. Hand protection

None normally needed. Use chemical resistant gloves when handling the preparation.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

No special controls are needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Yellow Crystal.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	4.5 as 1% solution in water.
Boiling point/boiling range:	Not applicable.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	Not applicable.
Relative Density:	Not applicable.
Solubility:	
-- Water solubility:	38 g/ 100 mL.
Tricalcium Phosphate:	<1 g/L at 25 °C.
-- Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not determined.
Viscosity:	Not applicable.
Vapor density (Air = 1):	Not applicable.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid
There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid
Strong alkalis, magnesium.

10.3. Hazardous decomposition products
Normally stable.
Hazardous polymerization will NOT occur.
Ammonia and/or phosphorous oxides can be evolved at very high temperatures.

11. TOXICOLOGICAL INFORMATION

This product has not been tested for toxicological effects. Product is treated as a nuisance dust.

Components:

Monoammonium Phosphate:
Material is irritating.
Harmful if swallowed.

Ammonium sulfate:

Toxicity Data:	Oral (rat) LD 50	2840 mg/kg.
Target Organs:	Lungs and gastrointestinal.	

Tricalcium Phosphate:

Eye irritation:	Not irritating.
Skin irritation:	Not irritating.

Silica Gel:

Toxicity Data:	Oral (rat) LD 50	>4500 mg/kg.
Toxicity Data:	Inhalation (rat) LC 50	>2 mg/hr.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity
Not determined.

12.2. Mobility
Not determined.

12.3. Persistence and degradability
Not relevant.

12.4. Bioaccumulative potential
Not determined.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	None

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.

Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Fire Extinguisher, Class 2.2.
UN No. 1044.

For additional transport information, contact Flag Fire.

No harm to the environment is expected from this preparation.

15. REGULATORY INFORMATION

Product:

EU Classification:		Harmful.
R Phrases:	22	Harmful if swallowed.
	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Limit Values for Exposure:
Nuisance dust limit:

OSHA TWA:	15 mg/m^3
ACGIH TLV-TWA:	10 mg/m^3.

EINECS Status: All components are included in EINECS inventories or are exempt from listing.

EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.

Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:		
HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **D2B** **Harmful if swallowed. Irritating to eyes and skin.**

A Fire Extinguisher charged with Air is rated **A** **Compressed Gas.**

Format is from directive 2001/58/EC.

EINECS data is from http://exb.jrc.it/existing-chemicals/

Toxicological information added from the EINICS ESIS (Existing Substances Information System). A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"Fire Extinguisher PDC Standard Dry Chemical"
	"Fire Extinguisher Powder BC Standard"
Chemical Name:	N/A – This is a mixture/preparation.
CAS No.:	N/A – This is a mixture/preparation.
Chemical Formula:	N/A – This is a mixture/preparation.
EINECS Number:	N/A – This is a mixture/preparation.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	March, 2005

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.

Ingredient Name:	Sodium Bicarbonate.
Chemical Formula:	$NaHCO_3$.
CAS No.:	144-55-8.
EINECS Number:	205-633-8.
Concentration, Wt %:	85-95 %.
Hazard Identification:	See Heading 3.
Ingredient Name:	Mica, Muscovite.
Chemical Formula:	Mixture/preparation.
CAS No.:	12001-26-2.
EINECS Number:	(a).
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.
Ingredient Name:	Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth).
Chemical Formula:	$Mg_xAl_y(SiO4)_z$.
CAS No.:	8031-18-3.
EINECS Number:	(a).
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.
Ingredient Name:	Methyl Hydrogen Polysiloxane.
Chemical Formula:	Mixture/preparation.
CAS No.:	63148-57-2.
EINECS Number:	(b).
Concentration, Wt %:	<1 %.
Hazard Identification:	See Heading 3.

Fire Extinguishers contain compressed air to ensure a high velocity discharge of product.

2.2. (i) There are NO substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.

(ii) There are NO substances for which there are Community workplace exposure limits, which are not already included in (i) above.

(a) EINICS does not include most naturally occurring raw materials. See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

(b) EINICS does not include synthetic polymers (These are registered in EINICS under their building blocks, monomers.). See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive1999/45/EC.]

3. HAZARDS IDENTIFICATION

FOR HUMANS:
Product:
This preparation is not classified as dangerous according to Directive 1999/45/EC.

Limit Values for Exposure:
Nuisance dust limit: OSHA TWA: 15 mg/m^3.
ACGIH TLV-TWA: 10 mg/m^3.

While not considered to be a carcinogen, this product does contain minute traces of Crystalline silica. Crystalline Silica has been determined by IARC to show limited evidence of being carcinogenic in humans and sufficient evidence in animals. It is not listed as a carcinogen by OSHA or ACGIH.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:
Acute Exposure:
Eye Contact: Mildly irritating for short periods of time.
Skin Contact: May be mildly irritating.
Inhalation: Not a likely route of entry. May be irritating to mucous membranes.
Ingestion: Not an expected route of entry.
Chronic Overexposure: Lungs, Gastrointestinal, and kidney can be affected.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT:
No adverse effects expected.

4. FIRST AID MEASURES

Eye Contact: Wash with water for a minimum of 15 minutes. If irritation persists seek medical attention.
Skin Contact: Wash affected area with soap and water. If irritation persists seek medical attention.
Inhalation: Remove from exposure. If irritation persists seek medical attention.
Ingestion: Dilute by drinking large quantities of water.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.
There are NO extinguishing media which must not be used for safety reasons.
NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.
Clean up: Sweep up and reuse or place in a closed container for disposal, see Heading 13.
NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
See incompatibility information in Heading 10.

7.2. Storage

NO special conditions are needed for safe storage.
See incompatibility information in Heading 10.
Store in original container or Flag Fire fire extinguisher. Keep tightly closed until used.
There is minimal danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Nuisance dust limit:	OSHA TWA:	15 mg/m^3.
	ACGIH TLV-TWA:	10 mg/m^3.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Mechanical ventilation is preferred.
Dust mask where dustiness is prevalent, or TLV is exceeded. Use mechanical filter respirator if exposure is prolonged.

8.2.1.2. Hand protection

None normally needed. Use impervious gloves if irritation occurs.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

No special controls are needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	White Crystal.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	8.6 (@ 20 °C; 1% wt/wt dissolved in water)
Boiling point/boiling range:	Not applicable.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	Not applicable.
Relative Density:	Not applicable.
Solubility:	
– Water solubility:	Partially soluble.
Sodium Bicarbonate:	96 g/L (at 20 °C).
– Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not applicable.
Viscosity:	Not applicable.
Vapor density (Air = 1):	Not applicable.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

Strong acids, NaK alloy, and $NH_4H_2PO_4$.

10.3. Hazardous decomposition products

Normally stable, decomposition will occur above 190 °F.

Hazardous polymerization will NOT occur.

Combustion or decomposition products include carbon dioxide.

11. TOXICOLOGICAL INFORMATION

This product has not been tested for toxicological effects. Product is treated as a nuisance dust.

Components:

Sodium Bicarbonate:

LD50 (rat) = 4220 mg/kg.
Skin irritation (rabbit) = Not irritating.
Skin irritation (human) = Slightly irritating.
Eye irritation (rabbit) = Not irritating.
Eye irritation (human) = Slightly irritating.
May be irritating to mucous membranes and upper respiratory tract.
May be harmful if swallowed in large amounts.

Mica:

May be irritating to eyes, skin, or mucous membranes.

Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth):

Irritating to eyes, skin, mucous membranes.
Target Organs: Lungs

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Not determined.

12.2. Mobility

Not determined.

12.3. Persistence and degradability

Not relevant.

12.4. Bioaccumulative potential

Not determined.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	Carbon dioxide from decomposition or reaction is a global warming gas.

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.

Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Fire Extinguisher, Class 2.2.
UN No. 1044.

For additional transport information, contact Flag Fire.

No harm to the environment is expected from this preparation.

15. REGULATORY INFORMATION

EU Classification: This preparation is not classified as dangerous according to Directive 1999/45/EC.

Nuisance dust limit: OSHA TWA: 15 mg/m^3
ACGIH TLV-TWA: 10 mg/m^3.

EINECS Status: All components are included in EINECS inventories or are exempt from listing.
EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: None are known.
Restrictions on Marketing and Use: None are known.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	1	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **D2B** **Product may irritate skin or mucous membrane.**

A Fire Extinguisher charged with Air or Nitrogen is rated **A** **Compressed Gas.**

Format is from directive 2001/58/EC.
EINECS data is from http://exb.jrc.it/existing-chemicals/

The EU Classification has been changed in accordance with Directive 1999/45/EC.
Toxicological information added from the EINICS ESIS (Existing Substances Information System).
A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

I. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"Fire Extinguisher PKD Dry Chemical"
	"Fire Extinguisher Powder BC"
Chemical Name:	N/A – This is a mixture/preparation.
CAS No.:	N/A – This is a mixture/preparation.
Chemical Formula:	N/A – This is a mixture/preparation.
EINECS Number:	N/A – This is a mixture/preparation.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	May, 2004

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.

Ingredient Name:	Potassium Bicarbonate.
Chemical Formula:	$KHCO_3$.
CAS No.:	298-14-6.
EINECS Number:	206-059-0.
Concentration, Wt %:	85-95 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Magnesium Aluminum Silicate (Attapulgite Clay or Fuller's Earth).
Chemical Formula:	$Mg_xAl_y(SiO4)_z$.
CAS No.:	8031-18-3.
EINECS Number:	(a).
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Mica, Muscovite.
Chemical Formula:	Mixture/preparation.
CAS No.:	12001-26-2.
EINECS Number:	(a).
Concentration, Wt %:	1-5 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Silica Gel.
Chemical Formula:	$-[OSi(O)]-(H_2O)_X$.
CAS No.:	112926-00-8.
EINECS Number:	(b).
Concentration, Wt %:	0-1 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Methyl Hydrogen Polysiloxane.
Chemical Formula:	Mixture/preparation.
CAS No.:	63148-57-2.
EINECS Number:	(b).
Concentration, Wt %:	0-1 %.
Hazard Identification:	See Heading 3.

Ingredient Name:	Purple Pigment
Chemical Formula:	Mixture/preparation.
CAS No.:	Mixture/preparation.
EINECS Number:	Mixture/preparation.
Concentration, Wt %:	<1 %.
Hazard Identification:	See Heading 3.

Fire Extinguishers contain compressed air to ensure a high velocity discharge of product.

2.2. (i) There are NO substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.

(ii) There are NO substances for which there are Community workplace exposure limits, which are not already included in (i) above.

(a) EINICS does not include most naturally occurring raw materials. See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

(b) EINICS does not include synthetic polymers (These are registered in EINICS under their building blocks, monomers.). See: 67/548/EEC, article 13; 79/831/EC; and 81/437/EC.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive 1999/45/EC.]

3. HAZARDS IDENTIFICATION

FOR HUMANS:
Product:
This preparation is not classified as dangerous according to Directive 1999/45/EC.

Limit Values for Exposure:

Nuisance dust limit:	OSHA TWA:	15 mg/m^3
	ACGIH TLV-TWA:	10 mg/m^3

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

Silica Gel is a Synthetic Amorphous Silica which is considered a nuisance dust and no medical conditions are abnormally aggravated by this product.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:

Acute Exposure:	
Eye Contact:	Mildly irritating for short periods of time.
Skin Contact:	May be mildly irritating.
Inhalation:	May irritate the respiratory tract. Transient cough, shortness of breath.
Ingestion:	Not an expected route of entry.
Chronic Overexposure:	No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT:
No data available.

4. FIRST AID MEASURES

Eye Contact:	Wash with water for a minimum of 15 minutes. If irritation persists seek medical attention.
Skin Contact:	Wash affected area with soap and water. If irritation persists seek medical attention.
Inhalation:	Remove from exposure. If irritation persists seek medical attention.
Ingestion:	Dilute by drinking large quantities of water.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.
There are NO extinguishing media which must not be used for safety reasons.
NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.
Clean up: Sweep up and reuse or place in a closed container for disposal, see Heading 13.
NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
See incompatibility information in Heading 10.

7.2. Storage

NO special conditions are needed for safe storage.
See incompatibility information in Heading 10.
Store in original container or Flag Fire fire extinguisher. Keep tightly closed until used.
There is minimal danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Limit Values for Exposure

Nuisance dust limit:	OSHA TWA:	15 mg/m^3
	ACGIH TLV-TWA:	10 mg/m^3

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Mechanical ventilation is preferred.
Dust mask where dustiness is prevalent, or TLV is exceeded. Use mechanical filter respirator if exposure is prolonged.

8.2.1.2. Hand protection

None normally needed. Use impervious gloves if irritation occurs.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles as mechanical barrier for prolonged exposure.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

No special controls are needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Purple Crystal.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	Not applicable.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	Not applicable.
Relative Density (Water = 1):	2.16.
Solubility:	
– Water solubility:	23 g/ 100 mL.
Potassium bicarbonate:	333 g/L @ 20 °C.
– Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not applicable.
Viscosity:	Not applicable.
Vapor density (Air = 1):	Not applicable.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

Strong acids, NaK alloy, and $NH_4H_2PO_4$.

10.3. Hazardous decomposition products

Normally stable, decomposes if heated above 100-120 °C.

Hazardous polymerization will NOT occur.

Combustion or decomposition products include carbon dioxide and potassium oxide.

11. TOXICOLOGICAL INFORMATION

This product has not been tested for toxicological effects. Product is treated as a nuisance dust.

Components:

Potassium Bicarbonate:

LD50 (rat) = >2000 mg/kg.
Skin irritation: Not irritating (index = 0,5/8).
Eye irritation: Not irritating (index = 7,9/110).
May be irritating to mucous membranes and upper respiratory tract.
May be harmful if swallowed in large amounts.

Mica:

May be irritating to eyes, skin, or mucous membranes.

Silica Gel:

Toxicity Data:	Oral (rat) LD 50	>4500 mg/kg.
Toxicity Data:	Inhalation (rat) LC 50	>2 mg/hr.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity
Not determined.

12.2. Mobility
Not determined.

12.3. Persistence and degradability
Not determined.

12.4. Bioaccumulative potential
Not determined.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	Carbon dioxide from decomposition or reaction is a global warming gas.

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.
Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Fire Extinguisher, Class 2.2.
UN No. 1044.

For additional transport information, contact Flag Fire.
No harm to the environment is expected from this preparation.

15. REGULATORY INFORMATION

EU Classification: This preparation is not classified as dangerous according to Directive 1999/45/EC.

Nuisance dust limit:	OSHA TWA:	15 mg/m^3
	ACGIH TLV-TWA:	10 mg/m^3
EINECS Status:	All components are included in EINECS inventories or are exempt from listing.	
EPA TSCA Status:	All components are included in TSCA inventories or are exempt from listing.	
Canadian DSL (Domestic Substances List):	All components are included in the DSL or are exempt from listing.	

Environmental restrictions:	None are known.
Restrictions on Marketing and Use:	None are known.

Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **D2B Product may irritate skin or mucous membrane.**

A Fire Extinguisher charged with Air is rated **A Compressed Gas.**

Format is from directive 2001/58/EC.

EINECS data is from http://exb.jrc.it/existing-chemicals/

The EU Classification has been changed in accordance with Directive 1999/45/EC.

Toxicological information added from the EINICS ESIS (Existing Substances Information System).

A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

Great Lakes Chemical Corporation

MATERIAL SAFETY DATA SHEET

MSDS Number: 00057 **Effective Date:** 4/7/98
Product Name: **FM-200** **Page:** 1 of 9

SECTION I - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	**FM-200**
Manufacturer:	Great Lakes Chemical Corporation
Address:	P.O. Box 2200
City:	West Lafayette
State:	Indiana
Zip:	47996-2200
Emergency Telephone Number:	**1-800-949-5167**
Information Telephone Number:	1-765-497-6100 **Fax:** 1-765-497-6123
Chemtrec Phone:	**1-800-424-9300**
Effective Date:	4/7/98
Supercede Date:	8/11/97
MSDS Prepared By:	Regulatory Affairs Department/Great Lakes Chemical Corporation
Synonyms:	1,1,1,2,3,3,3-Heptafluoropropane, 2H-Heptafluoropropane
Product Use:	Fire extinguishing, fire suppression, explosion suppression and inerting agent
Chemical Name:	1,1,1,2,3,3,3-Heptafluoropropane
Chemical Family:	Halogenated alkane

Additional Information

No information available

SECTION II - COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NO.	%	EXPOSURE LIMITS
1,1,1,2,3,3,3-Heptafluoropropane	431890	>99	Y (Hazardous) Not established (OSHA PEL TWA) Not established (OSHA PEL STEL) Not established (OSHA PEL CEIL) Not established (ACGIH TLV TWA) Not established (ACGIH TLV STEL) Not established (ACGIH TLV CEIL)

*Mixture. Indented chemicals components of mixture.

Additional Information

No information available

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview:
Colorless gas
Odorless
Direct eye or skin contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues.
May cause central nervous system effects.
Inhalation of high concentrations can be harmful or fatal due to oxygen deprivation and/or heart irregularities.

Relevant Routes of Exposure:
Inhalation

Signs and Symptoms of Overexposure:
Symptoms similar to oxygen deprivation (headache, nausea, dizziness or loss of consciousness) may result from overexposure by inhalation. Heart irregularities such as irregular pulse or heart palpitations may indicate cardiac sensitivity. Cold, white or discolored skin or in severe cases blistering, can be a sign of frostbite caused by cold liquids or gases.

Medical Conditions Generally Aggravated By Exposure:
Persons with preexisting cardiac, respiratory, or central nervous system disorders may be more susceptible to effects of an overexposure. The use of epinephrine or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of compounds.

Potential Health Effects: See Section XI for additional information.

Eyes: Direct eye contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues.

Skin: Direct skin contact with the liquid or cold gas can cause chilling or possibly frostbite of exposed tissues.

Ingestion: Not expected to be a hazard in normal industrial use.

Inhalation: Inhalation of high concentrations can be harmful or fatal due to oxygen deprivation and/or heart irregularities (arrhythmias). Misuse of the product by deliberately inhaling high concentrations of this gas could cause death without warning.

Carcinogenicity:

NTP:	No
IARC:	No
OSHA:	No
ACGIH:	No
OTHER:	No

Additional Information

No information available

SECTION IV - FIRST AID MEASURES

Eyes: Flush with water. Get medical attention.

Skin: Flush with water; if frostbite occurs get medical attention.

Ingestion: No information available

Inhalation: Remove person to fresh air; if not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical

SECTION IV - FIRST AID MEASURES

attention.

Antidotes: No information available

Notes to Physicians and/or Protection for First-Aiders: The use of epinephrine or similar compounds can increase susceptibility to heart irregularities caused by excessive exposure to these types of compounds.

Additional Information

No information available

SECTION V - FIRE FIGHTING MEASURES

Flammable Limits in Air (% by Volume): Not applicable

Flash Point: Nonflammable gas

Autoignition Temperature: Not available

Extinguishing Media: All conventional media are suitable.

Fire Fighting Instructions: Keep cylinders cool with a water spray applied from a safe distance. Use a self-contained breathing apparatus if containers rupture or release under fire conditions. Do not allow reentry into areas where this material has been released without first ventilating to remove products of combustion/decomposition.

Unusual Fire and Explosion Hazards: Although containers of our product are provided with pressure and temperature relief devices, containers can rupture if exposed to localized heat. Thermal decomposition will generate toxic and corrosive gases.

Flammability Classification: Nonflammable gas

Known or Anticipated Hazardous Products of Combustion: Decomposition by elevated temperatures (fire conditions, glowing metal surfaces) may generate hazardous decomposition products common to other CFCs, HCFCs or HBFCs. These can include hydrogen fluoride, carbon monoxide, carbon dioxide and others.

Additional Information

NNo information availabl

SECTION VI - ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Evacuate the area and ventilate. Do not enter areas where high concentrations may exist (especially confined or poorly ventilated areas) without appropriate protective equipment including a self-contained breathing apparatus.

Personal Precautions: See Section VIII.

Environmental Precautions: No information available

Additional Information

No information available

SECTION VII - HANDLING AND STORAGE

Handling:	Use the same type of precautions as would be used in handling any cryogenic gas. Protect container from damage. Handle in well-ventilated areas. When this material is used as a firefighting agent in fixed or portable extinguishing systems, follow manufacturer's instructions for operation, inspection, maintenance and repair of the system.
Storage:	Store in a cool, dry, well-ventilated area away from incompatible materials. Keep container tightly closed.
Other Precautions:	No information available

Additional Information

No information available

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:	No information available
Ventilation Requirements:	Use local ventilation to minimize exposure to gas. Use mechanical ventilation for general area control.
Personal Protective Equipment:	
Eye/Face Protection:	Chemical splash goggles when handling liquid
Skin Protection:	Use lined neoprene gloves if handling liquid. Clothing designed to minimize skin contact
Respiratory Protection:	Wear a NIOSH/MSHA approved self-contained breathing apparatus in emergency situations. Consult the OSHA respiratory protection information located at 29CFR 1910.134 and the American National Standard Institute's Practices of Respiratory Protection Z88.2.
Other Protective Clothing or Equipment:	No information available
Exposure Guidelines:	See Section II.
Work Hygienic Practices:	Wash thoroughly after handling. Wash contaminated clothing before reuse. Make sure piping is empty before doing maintenance work.

Additional Information

No information available

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Colorless gas
Boiling Point:	-16.4 degrees C (3 degrees F)
Bulk Density:	Not available
Color:	Colorless
Decomposition	

SECTION IX - PHYSICAL & CHEMICAL PROPERTIES

Temperature:	Not available
Evaporation Rate:	Not available
Freezing Point:	Not available
Heat Value:	Not available
Melting Point:	-131 degrees C (-204 degrees F)
Molecular/Chemical Formula:	C3HF7
Molecular Weight:	170
Octanol/Water Partition Coefficient:	Not available
Odor:	Odorless
Odor Threshold:	Not available
Particle Size:	Not available
Percent Volatile:	Not available
pH Value:	Not available
pH Concentration:	Not available
Physical State:	Gas
Reactivity in Water:	Not water reactive
Saturated Vapor Concentration:	Not available
Softening Point:	Not available
Solubility in Water:	260 mg/L
Specific Gravity or Density (Water=1):	1.46
Vapor Density:	6.04
Vapor Pressure:	58.8 psia at 70 degrees F (21 degreesC)
Viscosity:	Not available
Volatile Organic Compounds:	Not available
Water/Oil Distribution Coefficient:	Not available
Weight Per Gallon:	Not available

Additional Information

No information available

SECTION X - STABILITY AND REACTIVITY

Stability: Stable under normal conditions of handling and use.

Conditions to Avoid: None

Incompatibility With Other Materials: Powdered metals (ex. Al, Mg, or Zn) and strong alkalis, oxidizers or reducing agents are not compatible with this and most other halogenated organic compounds.

Hazardous Decomposition Products: Thermal decomposition may produce the following:

SECTION X - STABILITY AND REACTIVITY

Hydrogen fluoride
Carbon monoxide and carbon dioxide

Hazardous Polymerization: Will not occur
Conditions to Avoid: None

Additional Information

No information available

SECTION XI - TOXICOLOGICAL INFORMATION

VALUE (LD50 OR LC50)	ANIMAL	ROUTES	COMPONENTS

No information available

SECTION XII - ECOLOGICAL INFORMATION

Ecological Information: No information available

Additional Information

No information available

SECTION XIII - DISPOSAL CONSIDERATIONS

Disposal Considerations: Non-contaminated product is reclaimable. Contact Great Lakes Chemical Corporation for information. Otherwise, dispose of waste in an approved chemical incinerator equipped with a scrubber as allowed by current Local, State/Province, Federal/Canadian laws and regulations.

Additional Information

No information available

SECTION XIV - TRANSPORT INFORMATION

U.S. DOT

Proper Shipping Name:	Heptafluoropropane
Hazard Class:	2.2
ID Number:	UN3296
Packing Group:	N/A
Labels:	Nonflammable gas
Special Provisions:	N/A
Packaging Exceptions:	306
Non-Bulk Packaging:	304
Bulk Packaging:	314, 315
Air/Rail Limit:	75 kg
Air Cargo Limit:	150 kg
Vessel Stowage:	A
Other Stowage:	N/A
Reportable Quantity:	N/A

AIR - ICAO OR IATA

Proper Shipping Name:	Heptafluoropropane
Hazard Class:	2.2
ID Number:	UN3296
Subsidiary Risk:	N/A
Packing Group:	N/A
Hazard Labels:	Nonflammable gas
Packing Instructions:	200
Air Passenger Limit Per Package:	75 kg
Packing Instruction - Cargo:	200
Air Cargo Limit Per Package:	150 kg
Special Provisions Code:	N/A

WATER - IMDG

SECTION XIV - TRANSPORT INFORMATION

Proper Shipping Name:	Heptafluoropropane
Hazard Class:	2.2
ID Number:	UN3296
Packing Group:	N/A
Subsidiary Risk:	N/A
Medical First Aid Guide Code:	350

Additional Information

EmS No. 2-09

SECTION XV - REGULATORY INFORMATION

U.S. Federal Regulations:	The components of this product are either on the TSCA Inventory or exempt (i.e. impurities, a polymer complying with the exemption rule at 40 CFR 723.250) from the Inventory.
State Regulations:	None known
International Regulations:	This material (or each component) is listed on the following inventories: EU - EINECS Canadian WHMIS Hazard Class and Division = A.

SARA Hazards:

Acute:	Yes
Chronic:	No
Reactive:	No
Fire:	No
Pressure:	No

Additional Information

The above regulatory information represents only selected regulations and is not meant to be a complete list.

SECTION XVI - OTHER INFORMATION

NFPA Codes:

Health:	1
Flammability:	0
Reactivity:	0
Other:	0

HMIS Codes:

Health:	1
Flammability:	0
Reactivity:	0
Protection:	X

Label Statements:	Not available
Other Information:	Abbreviations: (L) = Loose bulk density in g/ml LOEC = Lowest observed effect concentration

SECTION XVI - OTHER INFORMATION

MATC = Maximum acceptable toxicant concentration
NA = Not available
N/A = Not applicable
NL = Not limited
NOEC = No observed effect concentration
NOEL = No observable effect level
NR = Not rated
(P) = Packed bulk density in g/ml
PNOC = Particulates Not Otherwise Classified
PNOR = Particulates Not Otherwise Regulated
REL = Recommended exposure limit
TS = Trade secret

Additional Information

Information on this form is furnished solely for the purpose of compliance with OSHA's Hazard Communication Standard, 29CFR 1910.1200 and The Canadian Environmental Protection Act, Canada Gazette Part II, Vol. 122, No. 2 and shall not be used for any other purpose.

Revision Information:
Section XIV - IMDG Code Information
Section XV - Regulatory Information

ANSUL

MATERIAL SAFETY DATA SHEET

FORAY

Product Code: 2001-2-015 ANa | Issue Date: 12-15-2013

1. Product and Company Identification

Material name	FORAY
Version #	01
Revision date	12-15-2013
CAS #	Mixture
Product Code	2001-2-015 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING Irritating to eyes and skin.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Avoid contact with eyes. Contact with eyes may cause irritation.
Skin	Avoid contact with the skin. May cause skin irritation.
Inhalation	Inhalation of dusts may cause respiratory irritation.
Ingestion	Not a likely route of entry.
Target organs	Eyes. Respiratory system. Skin.
Signs and symptoms	Irritation of eyes and mucous membranes.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
CALCIUM CARBONATE	471-34-1	1 - 2.5
Non-hazardous components	**CAS #**	**Percent**
Pigment Yellow 14	5468-75-7	0 - 0.1
Silicone fluid	63148-57-2	0.1 - 1
FULLERS EARTH	8031-18-3	2.5 - 10
Ammonium Sulfate	7783-20-2	10 - 20
Ammonium Phosphate	7722-76-1	60 - 80

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.

Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Hazardous combustion products	Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dust formation. Following product recovery, flush area with water.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Keep formation of airborne dusts to a minimum. Do not breathe dust. Avoid contact with eyes. Do not use in areas without adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling.
Storage	Keep container tightly closed. Guard against dust accumulation of this material. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
CALCIUM CARBONATE (471-34-1)	PEL	5.0000 mg/m3	Respirable fraction.
		15.0000 mg/m3	Total dust.
	TWA	5.0000 mg/m3	Respirable fraction.
		15.0000 mg/m3	Total dust.

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Do not get in eyes. Chemical goggles are recommended.
Skin protection	No special protective equipment required.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	Do not get in eyes.

9. Physical & Chemical Properties

Appearance	
Form	Powder.
Color	Yellow.
Odor	Odorless.
Physical state	Solid.
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Incompatible materials	Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components	Test Results
CALCIUM CARBONATE (471-34-1)	Acute Oral LD50 Rat: 6450 mg/kg

Local effects	Components of the product may be absorbed into the body through the skin. Contact may irritate or burn eyes.
Chronic effects	Hazardous by OSHA criteria. Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components	Test Results
CALCIUM CARBONATE (471-34-1)	LC50 Western mosquitofish (Gambusia affinis): > 56000 mg/l 96.00 Hours
Ammonium Sulfate (7783-20-2)	EC50 Water flea (Ceriodaphnia dubia): 52 - 67 mg/l 48.00 hours
	LC50 Pink salmon (Oncorhynchus gorbuscha): 0.068 mg/l 96.00 hours

Ecotoxicity	This material is not expected to be harmful to aquatic life.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Ammonium Phosphate (CAS 7722-76-1)	1.0 %
Ammonium Sulfate (CAS 7783-20-2)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Ammonium Phosphate (CAS 7722-76-1)	Listed.
Ammonium Sulfate (CAS 7783-20-2)	Listed.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - Yes Chronic Health - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Ammonium Sulfate (CAS 7783-20-2)	Listed.
CALCIUM CARBONATE (CAS 471-34-1)	Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 1* Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	12-15-2013

Date: 31 July 2014
Supercedes: 27 July 2011

MATERIAL SAFETY DATA SHEET

IN CASE OF EMERGENCY CALL CHEMTREC AT 1-800-424-9300

1. PRODUCT IDENTIFICATION AND COMPANY IDENTIFICATION:

Product Name: **GOJO® NATURAL* ORANGE™ SMOOTH HAND CLEANER**

Company Name & Address: GOJO Industries, Inc.
One GOJO Plaza, Suite 500
Akron, OH 44311

Emergency Phone: **1-800-424-9300 CHEMTREC**
Non-Emergency Phone: (330) 255-6000
MSDS Request Phone: (330) 255-6000 x8804

2. INFORMATION ON INGREDIENTS:

HAZARDOUS INGREDIENTS	CAS NUMBER	OSHA PEL	ACGIH TLV	% RANGE
Petroleum Distillates (vapor)	64742-47-8	---	200 mg/m3	< 10%

Other ingredient(s) with notification requirements:	CAS NUMBER	List
Petroleum Distillates	64742-47-8	MA 1; NJ 1; PA 1

3. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

When used according to instructions, the product applicable to this MSDS is safe and presents no immediate or long-term health hazard. However, abnormal entry routes, such as gross ingestion, may require immediate medical attention.

Potential Health Effects:

HMIS: Health 1 Flammability 1 Reactivity 0 Personal Protection None

Eye Contact: May cause eye irritation.
Skin Contact: No irritation or reaction expected.
Inhalation: Abnormal entry route
Ingestion: May cause upset stomach, nausea (Abnormal entry route).
Carcinogenicity: Not listed as a carcinogen by NTP, IARC, OSHA or ACGIH.

4. FIRST AID MEASURES:

Eye Contact: Do not rub eyes. Flush eyes thoroughly with water for 15 minutes. If condition worsens or irritation persists, contact physician.
Skin Contact: In the case of allergic reactions see a physician
Inhalation: Move to fresh air
Ingestion: Do not induce vomiting. Contact a physician or Poison Control Center.

5. FIRE FIGHTING MEASURES:

NFPA: Health 1 Fire 1 Reactivity 0

Flashpoint °F/°C (PMCC method): > 212°F/100°C
Unusual Fire and Explosion Hazards: None known.
Special Fire Fighting Procedures: None known.

Extinguishing Media: X Water Fog X Alcohol Foam X CO_2 X Dry Chemical ____ Other

6. ACCIDENTAL RELEASE MEASURES:

No special requirements. Water clean up and rinse. CAUTION – WILL CAUSE SLIPPERY SURFACES.

7. HANDLING AND STORAGE:

Store at normal room temperature away from reach of small children. Keep containers sealed. Use older containers first. Avoid freezing conditions.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

Eye Protection:	None required under normal conditions.
Skin Protection:	None required under normal conditions.
Respiratory Protection:	None required under normal conditions.
Ventilation:	None required under normal conditions.
Protective Equipment or Clothing:	None required under normal conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance and Odor	White to gray opaque liquid, light citrus fragrance.
pH (undiluted):	5.0 - 8.0
VOC , %:	< 1%

10. STABILITY AND REACTIVITY:

Stable/Non reactive product.

11. TOXICOLOGICAL INFORMATION:

No acute or chronic toxic effects expected when used according to directions.

12. ECOLOGICAL CONSIDERATIONS:

No ecological or special considerations when used according to directions. Not considered environmentally harmful from normal dilution, expected usage and typical drainage to sewers, septic systems and treatment plants.

13. DISPOSAL CONSIDERATIONS:

No special considerations when disposed according to local, state and Federal regulations.

14. TRANSPORT INFORMATION:

Not classified as a hazardous material.

15. REGULATORY AND OTHER INFORMATION:

TSCA: All ingredients are listed or exempt per reference 15 USC 2602 (2)(B)(vi).

Complies with current FDA regulations for cosmetic and/or over-the-counter drug products.

WHMIS: Exempt under the Food and Drug Act

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Union CLP EC 1272/2008, REACH and the Global Harmonization Standard

1. SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

IDENTIFICATION of the SUBSTANCE or PREPARATION:

PRODUCT NAME: HALON 1211

CHEMICAL NAME: BROMOCHLORODIFLUOROMETHANE

OTHER MEANS OF IDENTIFICATION/SYNONYMS: R 12B1; BCF; Chlorodifluoromonobromomethane; Flugex 12B1; Fluorocarbon 1211; Freon 12B1; Halon 1211; Methane, bromochlorodifluoro-

RELEVANT PRODUCT USE: Fire Extinguishing Material

USES ADVISED AGAINST: Other than Relevant Use

COMPANY/UNDERTAKING IDENTIFICATION:

U.S. MANUFACTURER: H3R Clean Agents

ADDRESS: 483 Magnolia Ave
Larkspur, CA, U.S.A. 94939

PHONE: 1-800/249-4289 (8:00 a.m. to 4:30 p.m. PST)

FAX: 1-415/945-0311

EUROPEAN. SUPPLIER/MANUFACTURER'S NAME:

ADDRESS:

BUSINESS PHONE:

WEB SITE: www.h3rcleanagents.com

EMERGENCY PHONE: CHEMTREC: 1-800-424-9300 (U.S./Canada/Puerto Rico) [24-hours]
CHEMTREC: +1-703-527-3887 (Outside North America) [24-hours]

DATE OF PREPARATION: September 21, 2006

DATE OF REVISION: August 30, 2012

ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This compound has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR. The compound is also classified per all applicable EU Directives through EC 1907: 2006, the European Union CLP EC 1272/2008 and the Global Harmonization Standard.

SECTION 2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with EU CLP 1272: 2008/2011 and the Global Harmonization Standard. This is a self-classification.

Classification: Gases Under Pressure/Liquefied Gas Signal Word: Warning Hazard Statement Code: H280

Precautionary Statement Codes: P410 + P403

Hazard Symbol/Pictogram: GHS04

EU 67/548/EEC LABELING AND CLASSIFICATION: Classified in accordance with the European Community Council Directive 67/548/EEC or subsequent Directives. Under this regulation, compressed and liquefied gases that do not meet any hazard classification, have no applicable classification.

Classification: Not Applicable Risk Phrase Codes: Not Applicable Safety Phrase Codes: Not Applicable

Hazard Symbol: Not Applicable

See Section 16 for full classification information for this product.

EMERGENCY OVERVIEW: **Product Description:** Halon 1211 is a colorless, liquefied gas, with a sweet odor, shipped under pressure. **Health Hazards:** The main acute health hazard associated with releases of this gas is asphyxiation by displacement of oxygen. This gas is heavier than air and will sink into low areas, creating an asphyxiation hazard. The main chronic health hazard associated with releases of this gas is possible adverse effects to the central nervous system and possible cardiac sensitization and arrhythmias. Chronic skin exposure may cause dermatitis. **Flammability Hazards:** This gas is not flammable. **Reactivity Hazards:** This gas is not reactive. **Environmental Hazards:** Release of this product to the environment is not expected to cause environmental harm. **Emergency Response Considerations:** Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding. **WARNING**—If rescue personnel need to enter an area suspected of having a low level of Oxygen, they should be equipped with Self-Contained Breathing Apparatus (SCBA) and appropriate personal protective equipment.

SECTION 3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	Chemical Formula	CAS #	EINECS #	% Composition	EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements
Bromochlorodifluoromethane	$CBrClF_2$	353-59-3	206-537-9	> 99%	SELF CLASSIFICATION EU 67/548/EEC Classification: Not Applicable Risk Phrases: Not Applicable Symbols: Not Applicable GHS & EU CLP: 1272/2008: Classification: Compressed Gas/Liquefied Gas Hazard Statement Codes: H280 Hazard Symbols/Pictograms: GHS04

See Section 16 for full product classification information.

SECTION 4. FIRST AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. Self-Contained Breathing Apparatus should be worn if the level of oxygen cannot be determined. Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Remove victim(s) to fresh air, as quickly as possible. Take copy of label and SDS to physician or other health professional with victim(s).

INHALATION EXPOSURE: If inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect occurs after removal to fresh air.

SKIN EXPOSURE: If this gas contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention. Remove any clothing that may restrict circulation to any frozen area. Do not rub frozen parts as tissue damage may occur. As soon as practicable, place any affected area in warm water bath which has a temperature that does not exceed 105°F (40°C). NEVER USE HOT WATER. NEVER USE DRY HEAT. If area of frostbite is extensive, and if possible, remove clothing while showering with warm water. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area of the body in the armpit. Encourage victim to gently exercise the affected part while being warmed. Frozen tissue is painless and appears waxy, with a possible yellow color. Frozen tissue will become swollen, painful and prone to infection when thawed. If the frozen part of the body has been thawed by the time medical attention has been obtained, cover the area with a dry sterile dressing and a large bulky protective covering.

EYE EXPOSURE: If mechanical injury occurs, cover eye with bandage and seek appropriate medical attention. If rapid release has caused frostbite, cover injured eye; an ophthalmologist should be sought as soon as possible.

INGESTION: Ingestion is an unlikely route of exposure for this gas.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None are anticipated.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Administer oxygen, if necessary, and treat symptoms. This gas is an asphyxiant and can induce cardiac muscle sensitization to circulating epinephrine-like compounds. Do NOT give adrenalin or similar sympathomimetic drugs. Do NOT allow victim to exercise until 24 hours following specific exposures. Freeze burns of mucosal tissue can develop following specific exposures.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT: Not Applicable

AUTOIGNITION: Not Applicable

FLAMMABLE RANGE: Not Applicable

EXTINGUISHING MEDIA: This is a non-flammable gas; use fire-extinguishing media appropriate for the surrounding materials.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

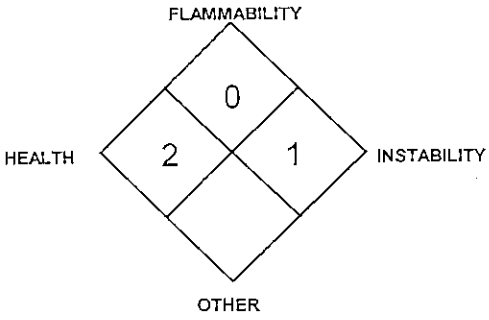
SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: This gas does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire. Most cylinders have a pressure release device, which will vent contents if the cylinder is exposed to high temperatures. This gas is heavier than air, creating an asphyxiation hazard in low areas.

EXPLOSION SENSITIVITY TO MECHANICAL IMPACT: Not sensitive.

EXPLOSION SENSITIVITY TO STATIC DISCHARGE: Not sensitive.

HAZARDOUS COMBUSTION PRODUCTS: Combustion or decomposition products above 481.7°C (900°F) include hydrogen bromide, hydrogen chloride, hydrogen fluoride, free halogens, and small amounts of carbonyl halides. These by-products have a sharp irritating odor and are dangerous even in low concentrations and in sufficient concentrations can result in personal injury or death.

NFPA RATING



Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Move fire-exposed containers if it can be done without risk to firefighters. Use water spray to cool fire-exposed cylinders. Take care not to block pressure relief valves. Stay away from ends of tanks (but realize that shrapnel may travel in any direction). Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Vapors from liquefied gas are initially heavier than air and spread along ground, creating an oxygen-deficient atmosphere is low-lying areas or confined spaces. Detection systems should be available to monitor for level of oxygen. The level of oxygen should above 19.5% before personnel can be allowed in the area without SCBA.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

All Releases: Minimum Personal Protective Equipment should be **Level B: Self-Contained Breathing Apparatus.** Note: chemically protective clothing may provide little or no thermal protection against the hazard of frostbite. The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection. If gas is leaking incidentally from the cylinder or its valve, contact your supplier.

SECTION 6. ACCIDENTAL RELEASE MEASURES (Continued)

METHODS FOR CLEAN-UP AND CONTAINMENT:

All Releases: In the event of a release of this product, operator should close the gas source if possible to do so safely. Evacuate area in the event of a significant release. Locate and seal the source of the leaking gas. If leak is in user's gas handling equipment or system, close cylinder valve, and safely vent high pressure before attempting repairs. If leak is from the cylinder, cylinder valve or the valve pressure relief device (PRD), contact your supplier. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666).

ENVIRONMENTAL PRECAUTIONS: All release to the environment should be avoided as this material has an ozone depletion potential and a global warming potential. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Releases of Halon 1211 can create an oxygen-deficient atmosphere. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations could occur without any significant warning symptoms, due to oxygen-deficiency. All work operations should be monitored in such a way that emergency personnel can be immediately contacted in the event of a release. Wearing contact lenses is not recommended when handling this gas.

Cylinder valves should be inspected regularly for physical damage or corrosion (apparent by discoloration or rust). Care should be taken to inspect the following valve locations for corrosion: neck (where valve inserts into cylinder); bonnet nut (where handle attaches to valve body). Close valve after each use and when empty.

Do not drag, roll, slide or drop cylinder. Use a suitable hand truck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times while in use. Use a pressure regulator to safely discharge product from cylinder. Use a check valve to prevent reverse flow into cylinder. Once cylinder has been connected to properly purged process, open cylinder valve slowly and carefully. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, etc.) into valve cap openings; doing so may damage valve, causing a leak to occur. Use an adjustable strap-wrench to remove over-tight or rusted caps.

Do not heat cylinders by any means to increase the discharge rate of product from the cylinder. Never apply flame or localized heat directly to any part of the cylinder. Cylinders should not be artificially cooled as certain types of steel undergo property changes when cryogenically cooled, thus making the cylinder unstable.

CONDITIONS FOR SAFE STORAGE: Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, Inc. at www.cganet.com pamphlet CGA P-1, *Safe Handling of Compressed Gases in Containers*. Local regulations may require specific equipment for storage and use. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked-over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Store containers away from heavily trafficked areas and emergency exits. Isolate from other non compatible chemicals (refer to Section 10, Stability and Reactivity). Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory systems to prevent full containers from being stored for long periods of time. **NOTE:** Use only DOT or ASME code cylinders designed for compressed gas storage. Cylinders must not be recharged except by or with the consent of owner.

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA: Use the proper CGA connections, DO NOT USE ADAPTERS:

PRODUCT USE: This product is used as a fire-extinguishing agent, refrigerant gas and as a cleaning agent.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Relieve pressure before attempting repairs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

VENTILATION AND ENGINEERING CONTROLS: Forced ventilation systems for the general work area should be provided. If appropriate, install automatic monitoring equipment to detect the level of oxygen.

OCCUPATIONAL/WORKPLACE EXPOSURE LIMITS/GUIDELINES:

Chemical Name	CAS #	OSHA PELs ppm	ACGIH TLVs ppm	NIOSH RELs ppm	NIOSH IDLH ppm	DFG MAKs ppm	AIHA WEELs ppm
Halon 1211	353-59-3	NE	NE	NE	NE	NE	NE

NE = Not Established

INTERNATIONAL EXPOSURE LIMITS: Currently, the following international exposure limits are in place for Halon 1211 (specific country limits may become available or change-consult individual countries for most current information).

Russia: STEL = 1000 mg/m^3, JUNE 1993

PERSONAL PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), equivalent standards of Canada (including CSA Standard Z94.4-02 and CSA Standard Z94.3-02), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)

PERSONAL PROTECTIVE EQUIPMENT (continued):

RESPIRATORY PROTECTION: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen level is below 19.5%, or during emergency response to a release of this product. If necessary, use only respiratory protection authorized under appropriate regulations. In the U.S., oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Use approved safety goggles or safety glasses. If necessary, refer to appropriate regulations for further information.

HAND PROTECTION: Wear leather gloves when handling cylinders of this gas. Otherwise, wear glove protection appropriate to the specific operation for which this gas is used. If necessary, refer to appropriate regulations.

BODY PROTECTION: Use body protection appropriate for task. Safety shoes are recommended when handling cylinders. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate country regulations and standards.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Halon 1211
Form	Liquefied gas under pressure
Color	Colorless
Odor	Sweet
Molecular Weight	165.36
Molecular Formula	$CBrClF_2$
Boiling Point @ 1 atm	-4°C (26°F)
Freezing/Melting Point @ 1 atm	-159.5°C (319.1°F)
Specific Gravity [Relative Density] (water = 1)	1.83
Solubility in Water :	Negligible
Vapor Pressure:	37.5 psi @ 70°F; 2,270 hPa @ 20°C
Vapor Density (air = 1)	5.7
Odor Threshold	Not determined

WARNING PROPERTIES FOR THIS GAS: The odor may be a warning of a release. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Cylinders should not be exposed to temperatures in excess of 125°F (52°C).

MATERIALS WITH WHICH GAS IS INCOMPATIBLE: Metal halides. Contact with acids can evolve highly toxic hydrogen chloride.

HAZARDOUS DECOMPOSITION PRODUCTS: *Combustion:* Combustion or decomposition products above 900°F include hydrogen bromide, hydrogen chloride, hydrogen fluoride, free halogens, and small amounts of carbonyl halides. These by-products have a sharp irritating odor. *Hydrolysis:* None known.

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY, SYMPTOMS OF ACUTE EXPOSURE: WARNING-If rescue personnel need to enter an area in which a release of Halon 1211 has occurred, they should be equipped with Self-Contained Breathing Apparatus (SCBA) and appropriate personal protective equipment. High concentration of this gas will create an oxygen-deficient atmosphere, creating the risk of asphyxiation.

EYE CONTACT: Release of a high-pressure gas may result in airborne objects.

INGESTION: Ingestion of this gas is not a likely route of industrial exposure.

INHALATION: Inhalation of high concentrations of this gas may lead to heart arrhythmias. High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances of over-exposure, death may occur, due to the displacement of oxygen. The effects associated with various levels of oxygen are described on the following page.

CONCENTRATION of OXYGEN	EXPOSURE SYMPTOM
20.9% Oxygen:	Normal oxygen concentration in air.
15–19% Oxygen:	Decreased ability to perform tasks. May impair coordination and may induce early symptoms in persons with heart, lung, or circulatory problems.
12–15% Oxygen:	Breathing increases, especially in exertion. Pulse up. Impaired coordination, perception, and judgment.
10–12% Oxygen:	Breathing further increases in rate and depth, poor coordination and judgment, lips slightly blue.
8-10%Oxygen:	Mental failure, fainting, unconsciousness, ashen face, blueness of lips, nausea (upset stomach), and vomiting.
6–8% Oxygen:	8 minutes, may be fatal in 50–100% of cases; 6 minutes, may be fatal in 25 to 50% of cases; 4–5 minutes, recovery with treatment.
4–6% Oxygen:	Coma in 40 seconds, followed by convulsion, breathing failure, death.

SECTION 11. TOXICOLOGICAL INFORMATION (Continued)

ROUTES OF ENTRY, SYMPTOMS OF ACUTE EXPOSURE (continued):

INHALATION (continued): **WARNING: Exposure to atmospheres containing 8–10% or less oxygen will bring about unconsciousness without warning and so quickly that individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.**

SKIN CONTACT: Transitory skin contact should not cause any adverse effects.

OTHER ACUTE HEALTH EFFECTS: Contact with rapidly expanding gases (which are released from under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain caused by frostbite can quickly subside, masking the injury. In addition, the sudden release of a pressurized gas (such as may occur in the event of a valve failure), presents a severe hazard of mechanical injury.

ACUTE EXPOSURE TARGET ORGANS: Respiratory system.

ROUTES OF ENTRY, SYMPTOMS OF CHRONIC EXPOSURE:

INHALATION: In animal tests, rats were exposed by inhalation for 21 days, dosed 6 hours per day, 5 days per week, at 3,300 ppm and no adverse effects of toxicological significance (NOAEL) were observed. At 10,000 ppm, there were signs of central nervous system depression. However, there were no signs of toxicity or histopathological changes observed and no potentiation of cardiac sensitization potential. Other animal testing resulted in cardiac sensitization at various concentrations for varying exposure times. Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

SKIN CONTACT: Prolonged contact may cause dermatitis (dry, red, cracked skin) due to defatting of the skin.

CHRONIC EXPOSURE TARGET ORGANS: Skin, cardiac system, central nervous system.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

CARCINOGENIC POTENTIAL: Halon 1211 is not listed as a carcinogen or as a potential carcinogen on EPA, NIOSH, GERMAN MAK, OSHA, NTP, IARC, or CAL/OSHA Carcinogen lists.

TOXICITY DATA: There toxicology data are currently available for Halon 1211.

BROMOCHLORODIFLUOROMETHANE:

TCLo (Inhalation-Man) 4 pph/1 minute: Peripheral Nerve and Sensation: paresthesis; Behavioral: hallucinations, distorted perceptions; Cardiac: EKG changes not diagnostic of specified effects

TCLo (Inhalation-Human) 295,200 mg/m^3/1 minute: Peripheral Nerve and Sensation: paresthesis

LC_{50} (Inhalation-Rat) 20 pph/15 minutes: Behavioral: tremor, convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: respiratory depression

LC_{50} (Inhalation-Rat) 2,140,000 mg/m^3/5 minutes

LCLo (Inhalation-Dog) 5 pph/30 minutes: Behavioral: tremor, convulsions or effect on seizure threshold; Cardiac: other changes

LCLo (Inhalation-Guinea Pig) 30 pph/2 hours: Behavioral: convulsions or effect on seizure threshold

TCLo (Inhalation-Rat) 396,000 mg/m^3/10 minutes: Behavioral: general anesthetic

TCLo (Inhalation-Rat) 210 µg/m^3/4 hours/12 weeks-Intermittent: Blood: pigmented or nucleated red blood cells, changes in erythrocyte (RBC) count, changes in platelet count

TCLo (Inhalation-Rat) 1 pph/6 hours/3 weeks-Intermittent: Behavioral: somnolence (general depressed activity)

TCLo (Inhalation-Rat) 50,000 ppm: female 6-15 day(s) after conception: Reproductive: Maternal Effects: other effects

Mutation in Microorganisms (Bacteria-*Salmonella typhimurium*) 10 pph

ADDITIONAL TOXICOLOGICAL DATA:

Acute: Inhalation-Rat: At 50,000 ppm, no effects were noted. At 75,000 ppm, slightly accelerated respiration was noted. At 100,000 ppm, mild excitement was seen. At 200,000 ppm, within 1 to 2 minutes marked excitation and some convulsions were noted. At 60 to 90 minutes, 2 of the 4 animals died. A concentration of 300,000 ppm immediately gave rise to convulsions and narcosis and all animals died within 50 min. Inhalation-Dog: At 25,000 to 75,000 ppm for 3.5 hours, there was reversible myocardial lesions and fatty degeneration of the liver.

Chronic: A case of occupational rhabdomyolysis in an individual susceptible to malignant hyperthermia was described. A 43 year old male was found to have a serum creatine-kinase activity of 650 international units per liter, normal range 10 to 200 international units/liter, suggesting that he was susceptible to malignant hyperthermia. His susceptibility was confirmed by in vitro testing of a muscle specimen with halothane and caffeine. The subject was subsequently employed in a factory that made fire extinguishers where one of his jobs consisted of discharging Bromochlorodifluoromethane from fire extinguishers before refilling them. Although discharging was done in open air, some gas was commonly inhaled. Eighteen months after beginning this work, he was examined for complaints of malaise and stiffness and weakness in the forearms and hands. The symptoms progressively worsened during the week and improved the weekends. Serum creatine-kinase activity was 1056 IU/l on one Saturday and 544 IU/l the following Monday. Because of the similarity in structure between Bromochlorodifluoromethane and halothane, the effects of the former on contractions of a muscle specimen were examined. Bromochlorodifluoromethane induced contractions identical to those of halothane. The patient was advised to change jobs. After he did so his symptoms immediately improved. It was concluded that the patient's rhabdomyolysis is due to recurring exposures to Bromochlorodifluoromethane. They recommended that persons susceptible to malignant hyperthermia avoid exposure to similar halogenated hydrocarbons. Inhalation-Human: At 4 to 5% for 1 minute using face mask, subjects at 30 seconds became slightly dizzy and light-headed. Over the next few seconds, these symptoms rapidly increased in severity until at 1 minute the subjects felt as though they were about to lose consciousness and exposure was stopped.

SECTION 11. TOXICOLOGICAL INFORMATION (Continued)

ADDITIONAL TOXICOLOGICAL DATA (continued):

Chronic (continued): Paresthesia of the fingers and other parts of the body was sometimes noted towards the end of the experiment. Heart rate rose by approximately 30% during the early stages of exposure and remained at that level through the experiment. Depression of the T wave was consistently observed on the ECG tracings. The subjects recovered rapidly on cessation of exposure and felt perfectly normal again within 5 minutes. The heart rate and the ECG reverted to normal within 1 minute. There were no delayed after effects. Inhalation-Dog: At 5,000 to 100,000 ppm resulted in cardiac sensitization above 20,000 ppm and in 10 to 0.5 minutes, depending on concentration.

IRRITANCY OF PRODUCT: Not applicable.

SENSITIZATION OF PRODUCT: Halon 1211 is not a human skin or respiratory sensitizer, but has been shown to be a cardiac sensitizer in animal studies.

REPRODUCTIVE TOXICITY INFORMATION: Halon 1211 is not reported to cause mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans. No animal data are available.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) have not been determined for Halon 1211.

SECTION 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: Using a structure estimation method based on molecular connectivity indices, the Koc for Halon 1211 can be estimated to be about 49. According to a classification scheme, this estimated Koc value suggests that Halon 1211 is expected to have very high mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: Photodegradation: > 50% after 14 years. If released to air, a vapor pressure of 2.07X10+3 mm Hg at 25°C indicates Halon 1211 will exist solely in the gas phase in the ambient atmosphere. Gas phase Bromochlorodifluoromethane will slowly be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be greater than 44 years. Halon 1211 absorbs very little UV radiation above 290 nm and is not expected to photolyze at a significant rate in the ambient atmosphere. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 9.4X10-2 atm-cu m/mole. Halon 1211 will volatilize rapidly from dry soil surfaces since it exists as a gas in the ambient environment. If released into water, Halon 1211 is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is expected to be an important fate process based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 1.3 hrs and 5.1 days, respectively. Given its high degree of halogenation, it is not expected to be an important degradation pathway for Halon 1211.

POTENTIAL TO BIOACCUMULATE: An estimated BCF of 5.8 was calculated for Halon 1211, using an estimated log Kow of 1.9 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

ECOTOXICITY: There is currently no evidence of adverse effects from exposure to Halon 1211 on aquatic life. Immediate adverse effect on plants would be related to oxygen-deficient environments or frost from rapidly expanding gases.

OZONE-DEPLETION POTENTIAL: Halon 1211 is rated as 3 (compared to trichlorofluoromethane nominally 1). Halon 1211 is a Class I ozone depleting chemical (40 CFR Part 82). Halon 1211 may contribute to global warming.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

RESULTS OF PBT and vPvB ASSESSMENT: No data available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

SECTION 13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

UNUSED PRODUCT / EMPTY CONTAINER: Do not dispose of residual product. Return used product in cylinders to: H3R Clean Agent Specialists, Inc.

DISPOSAL INFORMATION: Relative to the environment, this material has an ozone depletion potential and a global warming potential. Refer to the regulations of the U.S. EPA or the State-specific regulations for proper waste disposal, regulations of Canada and its Provinces, or regulations of EU member states.

U.S. EPA WASTE NUMBER: Not applicable.

EUROPEAN (EWC) WASTE CODES: 16 05 04* gases in pressure containers (including halons) containing dangerous substances

SECTION 14. TRANSPORT INFORMATION

U.S. SHIPPING INFORMATION: This gas is classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

UN IDENTIFICATION NUMBER:	UN 1044
U.S. DOT PROPER SHIPPING NAME:	Fire extinguisher with compressed or liquefied gas
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
U.S. DOT SHIPPING LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
PACKING GROUP:	Not Applicable
PLACARD (When required):	Class 2.2 (Non-Flammable Gas)

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

SECTION 14. TRANSPORT INFORMATION (Continued)

U.S. SHIPPING INFORMATION (continued):

CAUTION: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

ERG (EMERGENCY RESPONSE GUIDEBOOK) #: 126

SPECIAL PROVISIONS: T50 Portable tanks - Applies to various liquefied compressed gases: Consult the regulations for specific requirements Sec. 172.102 Special Provision Portable Tank Code T50.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

UN IDENTIFICATION NUMBER:	UN 1044
PROPER SHIPPING NAME:	Fire extinguisher with compressed or liquefied gas
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
PACKING GROUP:	Not Applicable
HAZARD SHIPPING LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
SPECIAL PROVISIONS:	None
EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX:	0.125
ERAP INDEX:	None
PASSENGER CARRYING SHIP INDEX:	None

PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX: 75

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This gas is classified as dangerous goods, per the International Air Transport Association.

UN IDENTIFICATION NUMBER:	UN 1044
PROPER SHIPPING NAME/DESCRIPTION:	Fire extinguisher with compressed or liquefied gas
HAZARD CLASS or DIVISION:	2.2 (Non-Flammable Gas)
HAZARD LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
PACKING GROUP:	None
EXCEPTED QUANTITIES:	E0

PASSENGER and CARGO AIRCRAFT PACKING INSTRUCTION: 213

PASSENGER and CARGO AIRCRAFT MAXIMUM NET QUANTITY PER PKG: 75 kg

PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY PACKING INSTRUCTION: Forbidden

PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY MAXIMUM NET QUANTITY PER PKG: Forbidden

CARGO AIRCRAFT ONLY PACKING INSTRUCTION: 213

CARGO AIRCRAFT ONLY MAXIMUM NET QUANTITY PER PKG: 150 kg

SPECIAL PROVISIONS:	A19
ERG CODE:	2L

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This material is classified as dangerous goods, per the International Maritime Organization.

UN No.:	1044
PROPER SHIPPING NAME:	Fire extinguisher with compressed or liquefied gas
HAZARD CLASS NUMBER:	2.2
PACKING GROUP:	None
SPECIAL PROVISIONS:	225
LIMITED QUANTITIES:	120 mL
EXCEPTED QUANTITIES:	E0
PACKING:	Instructions: P003; Provisions: None
IBCs:	Instructions: None; Provisions: None
TANKS:	Instructions: None; Provisions: None
EmS:	F-C, S-V
STOWAGE CATEGORY:	Category A.

MARINE POLLUTANT: This gas does not meet the criteria of a Marine Pollutant.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This gas is classified by the Economic Commission for Europe to be dangerous goods.

UN NO.:	1044
NAME and DESCRIPTION:	Fire extinguisher with compressed or liquefied gas
CLASS:	2
CLASSIFICATION CODE:	6A
PACKING GROUP:	None
LABELS:	2.2
SPECIAL PROVISIONS:	225, 594
LIMITED QUANTITIES:	120 mL
EXCEPTED QUANTITIES:	E0
PACKING INSTRUCTIONS:	P003

SECTION 14. TRANSPORT INFORMATION (Continued)

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR) [continued]:

SPECIAL PACKING INSTRUCTIONS:	None
MIXED PACKING PROVISIONS:	MP9
PORTABLE TANK and BULK CONTAINER:	Instructions: None; Special Provisions: None
HAZARD IDENTIFICATION No.:	None

The following shipping information applies when the product is supplied in types of cylinders other than fire extinguishers:

U.S. SHIPPING INFORMATION:

UN IDENTIFICATION NUMBER:	UN 1974
U.S. DOT PROPER SHIPPING NAME:	Chlorodifluorobromomethane *or* Refrigerant gas R12B1
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
U.S. DOT SHIPPING LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
PACKING GROUP:	Not Applicable
PLACARD (When required):	Class 2.2 (Non-Flammable Gas)
ERG (EMERGENCY RESPONSE GUIDEBOOK) #:	126

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

CAUTION: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

SPECIAL PROVISIONS: T50 Portable tanks - Applies to various liquefied compressed gases: Consult the regulations for specific requirements Sec. 172.102 Special Provision Portable Tank Code T50.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

UN IDENTIFICATION NUMBER:	UN 1974
PROPER SHIPPING NAME:	Chlorodifluorobromomethane *or* Refrigerant gas R12B1
HAZARD CLASS NUMBER and DESCRIPTION:	2.2 (Non-Flammable Gas)
PACKING GROUP:	Not Applicable
HAZARD SHIPPING LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
SPECIAL PROVISIONS:	None
EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX:	0.125
ERAP INDEX:	None
PASSENGER CARRYING SHIP INDEX:	None
PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX:	75

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA):

UN IDENTIFICATION NUMBER:	UN 1974
PROPER SHIPPING NAME/DESCRIPTION:	Chlorodifluorobromomethane *or* Refrigerant gas R12B1
HAZARD CLASS or DIVISION:	2.2 (Non-Flammable Gas)
HAZARD LABEL(S) REQUIRED:	Class 2.2 (Non-Flammable Gas)
PACKING GROUP:	None
EXCEPTED QUANTITIES:	E1

PASSENGER and CARGO AIRCRAFT PACKING INSTRUCTION: 200
PASSENGER and CARGO AIRCRAFT MAXIMUM NET QUANTITY PER PKG: 75 kg
PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY PACKING INSTRUCTION: Forbidden
PASSENGER and CARGO AIRCRAFT LIMITED QUANTITY MAXIMUM NET QUANTITY PER PKG: Forbidden
CARGO AIRCRAFT ONLY PACKING INSTRUCTION: 200
CARGO AIRCRAFT ONLY MAXIMUM NET QUANTITY PER PKG: 150 kg

SPECIAL PROVISIONS:	None
ERG CODE:	2L

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO):

UN No.:	1974
PROPER SHIPPING NAME:	Chlorodifluorobromomethane *or* Refrigerant gas R12B1
HAZARD CLASS NUMBER:	2.2
PACKING GROUP:	None
SPECIAL PROVISIONS:	None
LIMITED QUANTITIES:	120 mL
EXCEPTED QUANTITIES:	E1
PACKING:	Instructions: P200; Provisions: None
IBCs:	Instructions: None; Provisions: None
TANKS:	Instructions: T50; Provisions: None
EmS:	F-C, S-V
STOWAGE CATEGORY:	Category A.

MARINE POLLUTANT: This gas does not meet the criteria of a Marine Pollutant.

SECTION 14. TRANSPORT INFORMATION (Continued)

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

UN NO.:	1974
NAME and DESCRIPTION:	Chlorodifluorobromomethane ***or*** Refrigerant gas R12B1
CLASS:	2
CLASSIFICATION CODE:	2A
PACKING GROUP:	None
LABELS:	2.2
SPECIAL PROVISIONS:	None
LIMITED QUANTITIES:	120 mL
EXCEPTED QUANTITIES:	E1
PACKING INSTRUCTIONS:	P200
SPECIAL PACKING INSTRUCTIONS:	None
MIXED PACKING PROVISIONS:	MP9
PORTABLE TANK and BULK CONTAINER:	Instructions: (M) T50; Special Provisions: None
HAZARD IDENTIFICATION No.:	20

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This gas does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); this gas is not specifically listed in Annex III under MARPOL 73/78.

SECTION 15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

EPA - ENVIRONMENTAL PROTECTION AGENCY:

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (40 CFR Parts 117 and 302)
Reportable Quantity (RQ): Not Applicable

SARA TITLE III: Superfund Amendment and Reauthorization Act

SECTIONS 302/304: Emergency Planning and Notification (40 CFR Part 355)
Extremely Hazardous Substances: Halon 1211 is not listed.
Threshold Planning Quantity (TPQ): Not Applicable
Reportable Quantity (RQ): Not Applicable

SECTIONS 311/312: Hazardous Chemical Reporting (40 CFR Part 370)
IMMEDIATE HEALTH: No PRESSURE: Yes DELAYED HEALTH: No REACTIVITY: No FIRE: No

SECTION 313: Toxic Chemical Release Reporting (40 CFR 372)
Releases of Halon 1211 require reporting under Section 313.

CLEAN AIR ACT:

SECTION 112 (r): Risk Management Programs for Chemical Accidental Release (40 CFR Part 68)
Threshold Planning Quantity (TPQ): Not Applicable

TSCA: Toxic Substances Control Act
Halon 1211 is listed in the TSCA Inventory

OSHA - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR Part 1910.119: Process Safety Management of Highly Hazardous Chemicals.
Threshold Planning Quantity (TPQ): Not Applicable

OTHER U.S. FEDERAL REGULATIONS: Requirements under (40 CFR Part 82) may be applicable as Halon 1211 is designated as an ozone-depleting compound.

U.S. STATE REGULATORY INFORMATION:

CALIFORNIA PROPOSITION 65: Halon 1211 is NOT listed on the California Proposition 65 lists.

CANADIAN FEDERAL REGULATIONS:

CANADIAN DSL INVENTORY STATUS: Halon 1211 is listed on the DSL Inventory.

OTHER CANADIAN REGULATIONS: Halon 1211 is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations. Halon 1211 is not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS CLASSIFICATION and SYMBOLS: **Class A:** Compressed Gas

ADDITIONAL EUROPEAN REGULATIONS:

SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE PRODUCT: Currently, there is no specific legislation pertaining to this product.

CHEMICAL SAFETY ASSESSMENT: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

SECTION 16. OTHER INFORMATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2208 LABELING AND CLASSIFICATION: Classified in accordance with CLP Regulation (EC) 1272/2008. For information on classification under (67/548/EEC), see below.

Classification: Gas under Pressure/Liquefied Gas
Signal Words: Warning
Hazard Statements: H280: Contains gas under pressure; may explode if heated.
Prevention Statements:
Precautionary: None.
Response: None
Storage: P410 + P403: Protect from sunlight. Store in a well-ventilated place.
Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.
Hazard Symbol: GHS04

EU 67/548/EEC LABELING AND CLASSIFICATION: Under European Union Council Directive 67/548/EEC and subsequent Directives, this is no classification for simple compressed gases.

Classification: None Risk Phrases: None Safety Phrases: None Hazard Symbol: None

Information contained in this Safety Data Sheet is provided to our customers so they may comply with 29 CFR 1910.1200, Hazard Communication Standard, the Canadian WHMIS Standard, and the requirements of the European Union Directives. The intent of this Material Safety Data Sheet is to provide end users of this product with the health and physical hazards associated with possible exposure to this product. All statements, technical data and recommendations are based on readily available texts and data that H_3R Aviation, believes to be reliable and accurate. H_3R Aviation makes no warranties, guarantees or representations of any kind with respect to this product or this data. It is the responsibility of the user to obtain and use the most recent version of this MSDS.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721 • 800/441-3365

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

REVISION DETAILS: August 2009: Review and up-date of MSDS to current Standards. August 2012: Review and up-date SDS, to include European CLP 1272: 2008 and Global Harmonization Standard Classification.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: **1:** Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. **2:** Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. **3A:** Substances which have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. **3B:** Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known in vivo mutagens. **4:** Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) **5:** Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order

SKIN: Used when a there is a danger of cutaneous absorption.

EXPOSURE LIMITS IN AIR (continued):

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

SKIN: Used when a there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 (Minimal Hazard: No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation*: Essentially non-irritating. PII or Draize = "0". *Eye Irritation*: Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g. mechanical irritation]. Draize = "0". *Oral Toxicity LD_{50} Rat*: < 5000 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC_{50} Rat*: < 20 mg/L.); 1 (Slight Hazard: Minor reversible Injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation*: Slightly or mildly irritating. *Oral Toxicity LD_{50} Rat*: > 500-5000 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 1000-2000 mg/kg. *Inhalation Toxicity LC_{50}* 4-hrs *Rat*: > 2-20 mg/L); 2 (Moderate Hazard: Temporary or transitory injury may occur. *Skin Irritation*: Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation*: Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD_{50} Rat*: > 50-500 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 200-1000 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.5-2 mg/L.); 3 (Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation*: Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation*: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD_{50} Rat*: > 1-50 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: > 20-200 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: > 0.05-0.5 mg/L.); 4 (Severe Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation*: Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation*: Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD_{50} Rat*: ≤ 1 mg/kg. *Dermal Toxicity LD_{50}Rat or Rabbit*: ≤ 20 mg/kg. *Inhalation Toxicity LC_{50} 4-hrs Rat*: ≤ 0.05 mg/L).

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes.); 1 (Slight Hazard-Materials that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.];

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 2 (Moderate Hazard-Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); 3 (Serious Hazard- Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]);4 (Severe Hazard-Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric]).

PHYSICAL HAZARD: 0 (*Water Reactivity*: Materials that do not react with water. *Organic Peroxides*: Materials that are normally stable, even under fire conditions and will not react with water. *Explosives*: Substances that are Non-Explosive. Unstable *Compressed Gases*: No Rating. *Pyrophorics*: No Rating. *Oxidizers*: No "0" rating allowed. *Unstable Reactives*: Substances that will not polymerize, decompose, condense or self-react.); 1 (*Water Reactivity*: Materials that change or decompose upon exposure to moisture. *Organic Peroxides*: Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives*: Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases*: Pressure below OSHA definition. *Pyrophorics*: No Rating. *Oxidizers*: Packaging Group III; Solids: any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives*: Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.); 2 (*Water Reactivity*: Materials that may react violently with water. *Organic Peroxides*: Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives*: Division 1.4 -- Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases*: Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group II Solids: any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met. Liquids: any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives*: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature); 3 (*Water Reactivity*: Materials that may form explosive reactions with water. *Organic Peroxides*: Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives*: Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases*: Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics*: No Rating. *Oxidizers*: Packing Group I Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3.:2 potassium bromate/cellulose mixture. Liquids: Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. 1 (materials that, under emergency conditions, can cause significant irritation): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

HEALTH HAZARD (continued): 2 (materials that, under emergency conditions, can cause temporary incapacitation or residual injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 3,000 ppm but less than or equal to 5,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 2 mg/L but less than or equal to 10 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 200 mg/kg but less than or equal to 1000 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. 3 (materials that, under emergency conditions, can cause serious or permanent injury): Gases and vapors whose LC_{50} for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD_{50} for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD_{50} for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. 4 (materials that, under emergency conditions, can be lethal): Gases and vapors whose LC_{50} for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC_{50} for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD_{50} for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD_{50} for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC_{50} for acute inhalation toxicity, if its LC_{50} is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in according with Annex D. 1 Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendation on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed up flash point of the solvent. Most ordinary combustible materials. 2 Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 3 Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

DEFINITIONS OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: LD_{50} - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC_{50} - Lethal Concentration (gases) which kills 50% of the exposed animals; ppm concentration expressed in parts of material per million parts of air or water; mg/m^3 concentration expressed in weight of substance per volume of air; mg/kg quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other Information: BEI - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. BCF = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. TL_m = median threshold limit; Coefficient of Oil/Water Distribution is represented by log K_{ow} or log K_{oc} and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. EPA is the U.S. Environmental Protection Agency. NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). WHMIS is the Canadian Workplace Hazardous Materials Information System. DOT and TC are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (SARA); the Canadian Domestic/Non-Domestic Substances List (DSL/NDSL); the U.S. Toxic Substance Control Act (TSCA); Marine Pollutant status according to the DOT; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. OSHA - U.S. Occupational Safety and Health Administration.

ANSUL

MATERIAL SAFETY DATA SHEET

HALON 1211

Issue Date: 12-15-2013

1. Product and Company Identification

Material name	HALON 1211
Version #	01
Revision date	12-15-2013
CAS #	353-59-3
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Contents under pressure. Heat may cause the containers to explode.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation.
Eyes	None known.
Skin	None known.
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Ingestion	Not a likely route of entry.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
HALON 1211	353-59-3	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Flush thoroughly with water for at least 15 minutes. Get medical assistance.
Skin contact	Rinse with water.
Inhalation	Remove to fresh air.
Ingestion	Not likely, due to the form of the product.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters	
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Specific methods	None known.

6. Accidental Release Measures

Personal precautions	None known.
Environmental precautions	No special environmental precautions required.
Methods for containment	Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Not applicable.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Handle and open container with care.
Storage	Contents under pressure. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment	
Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Color	Not available.
Odor	Not available.
Physical state	Gas.
pH	3.2 - 3.7 The pH of saturated CO2 solutions varies from 3.7 at 101 kPa (1 atm) to 3.2 at 2370 kPa (23.4 atm)
Melting point	-256 °F (-159.5 °C)
Freezing point	-256 °F (-159.5 °C)
Boiling point	24.8 °F (-3.7 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	275.98 kPa
Vapor density	1.522 at 21°C
Specific gravity	1.512
Relative density	Not available.
Solubility (water)	2 g/l
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Under certain conditions, fluorocarbon vapors may decomp on contact with flames or hot surfaces, creating potential hazard of inhalation of toxic decomp products. When heated to decomp, emits very toxic fumes of hydrogen bromide, hydrogen chloride and hydrogen fluoride.
VOC	Not available.
Molecular weight	165.36 g/mol

Molecular formula	C-Br-Cl-F2

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Excessive heat.
Hazardous decomposition products	Hydrogen fluoride.

11. Toxicological Information

Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.
Contaminated packaging	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1974
Proper shipping name	Chlorodifluorobromomethane
Hazard class	2.2
Subsidiary hazard class	2.2

Additional information:

Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315
ERG number	126

DOT

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HALON 1211 (CAS 353-59-3)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

HALON 1211 (CAS 353-59-3) Listed.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No
Clean Water Act (CWA)	Toxic pollutant

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

HALON 1211 (CAS 353-59-3) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

HALON 1211 (CAS 353-59-3) Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 2 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 2 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	12-15-2013

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. **Identification of the preparation**

Product Name:	"Halon 1211, BCF"
Chemical Name:	Bromochlorodifluoromethane
CAS No.:	353-59-3
Chemical Formula:	$CBrClF_2$
EINECS Number:	206-537-9

1.2. **Use of the preparation**

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. **Company identification**

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	May, 2004

1.4. **Emergency telephone**

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1. Ingredient Name:	Bromochlorodifluoromethane.
Chemical Formula:	$CBrClF_2$.
CAS No.:	353-59-3.
EINECS Number:	206-537-9.
Concentration, Wt %:	>99 %.
Hazard Identification:	See Heading 3.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

Product:

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.

Limit Values for Exposure:

None known.

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	The liquid form of this material can produce chilling sensations and discomfort.
Skin Contact:	Systemically toxic concentrations are unlikely to be absorbed through the skin. Evaporation from the skin can produce chilling sensations. Skin injury does not result.
Inhalation:	Exposure to concentrations of this material above 4% for longer than one (1) minute can cause toxic side effects. These can include dizziness, impaired coordination, reduced mental acuity, and cardiac effects. Higher concentrations with longer exposures can cause unconsciousness or even death.
Ingestion:	Ingestion is not likely to occur since this material is a gas at room temperature.
Chronic Overexposure:	None known.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Cardiac problems.

FOR ENVIRONMENT:

Relative to the environment, this material has an ozone depletion potential and a global warming potential. See Heading 12.

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes while holding lids open. If redness, itching, or a burning sensation develops, get medical attention.

Skin Contact: Wash the material off the skin with copious amounts of soap and water for at least 15 minutes. If redness, itching, or a burning sensation develops, get medical attention.

Inhalation: Remove victim to fresh air. If cough or other respiratory symptoms occur, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.

Ingestion: If patient is conscious, give 1 or 2 glasses of warm water to drink and get medical attention. DO NOT INDUCE VOMITING. Have victim lie down and keep warm.

NOTE TO PHYSICIAN: Product is an asphyxiant and can induce cardiac muscle sensitization to circulating epinephrine-like compounds. Do NOT give adrenalin or similar sympathomimetic drugs. Do NOT allow victim to exercise until 24 hours following specific exposures. Freeze burns of mucosal tissue can develop following specific exposures.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.

Use water to cool fire-exposed cylinders or other containers.

Containers are equipped with pressure and temperature relief devices, but rupture may occur under fire conditions and toxic decomposition by-products may be formed if used in fires over 900 °C.

There are NO extinguishing media which must not be used for safety reasons.

Self-contained breathing apparatus with full facepiece and protective clothing when re-entering unventilated fire areas where product has been used.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.

Evacuate area; ventilate to outside atmosphere.

Cool or remove hot metal surfaces or source of non-extinguished flames.

Clean up: This product will vaporize and dissipate into the atmosphere. See Heading 13.

Relative to the environment, this material has an ozone depletion potential and a global warming potential. See Heading 12.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.

See incompatibility information in Heading 10.

7.2. Storage

Store as a liquefied compressed gas in DOT approved pressure vessels away from high temperatures.

If cylinder is not connected to a system, it must be safety capped to protect against actuation of valve and release of agent.

See incompatibility information in Heading 10.

Relative to the environment, this material has an ozone depletion potential and a global warming potential. See Heading 12.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Limit Values for Exposure:

None known.

8.2. Exposure controls

8.2.1. Occupational exposure controls

Eye wash and safety showers are good safety practice in work areas when working with liquids.

8.2.1.1. Respiratory protection

Mechanical ventilation is recommended in low areas or indoors where vapors may collect.

Local exhaust is recommended for most exposures.

Not normally necessary if controls are adequate. For high concentrations exceeding 4%, or if exposure is prolonged, use positive pressure air supplied respirator.

8.2.1.2. Hand protection

Use plastic gloves when handling the liquid.

8.2.1.3. Eye protection

Chemical goggles recommended as mechanical barrier.

Full faceshield is addition if splashing of liquid form is possible.

8.2.1.4. Skin protection

Standard work clothes should provide all protection which is necessary.

8.2.2. Environmental exposure controls

Relative to the environment, this material has an ozone depletion potential and a global warming potential. See Heading 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Colorless gas.
Odor:	Sweet.

9.2. Important health, safety, and environmental information

pH:	Not applicable.
Boiling point/boiling range:	–4 °C (26 °F).
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	37.5 psi @ 70 °F; 2,270 hPa @ 20 °C.
Relative Density (Water = 1):	1.83.
Solubility:	
– Water solubility:	Negligible.
– Fat solubility:	Not determined.
Partition coefficient, n-octanol/water (Log Pow):	Not determined.
Viscosity:	Not determined.
Vapor density (Air = 1):	5.7.
Evaporation rate:	Not applicable.

9.3. *Other information*

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid
Can be decomposed under fire conditions above 900 °F.

10.2. Materials to avoid
Active metals and fires involving metal hydrides.

10.3. Hazardous decomposition products
Normally stable.
Hazardous polymerization will NOT occur.
Combustion or decomposition products above 900 °F include hydrogen bromide, hydrogen chloride, hydrogen fluoride, free halogens, and small amounts of carbonyl halides. These by-products have a sharp irritating odor. They are dangerous even in low concentrations, and in sufficient concentrations can result in personal injury or death.

11. TOXICOLOGICAL INFORMATION

Product:		
Acute Toxicity Data:	Inhalation LC_{50} (rat)	225,000 ppm. Above 6% caused tremors, narcotic paralysis, spasms and respiratory disorders.
	Inhalation LC_{50} (rat)	31,300 ppm/4 hrs.
	Inhalation LC_{50} (rat)	200,000 ppm/15 min.
	Inhalation (rat)	At 50,000 ppm, no effects were noted. At 75,000 ppm, slightly accelerated respiration was noted. At 100,000 ppm, mild excitement was seen. At 200,000 ppm, within 1 to 2 minutes marked excitation and some convulsions were noted. At 60 to 90 minutes, 2 of the 4 animals died. A concentration of 300,000 ppm immediately gave rise to convulsions and narcosis, and all animals died within 50 minutes.
	Inhalation (dog)	At 25,000 to 75,000 ppm for 3.5 hours, there was reversible myocardial lesions and fatty degeneration of the liver.
Acute Irritation Data:	Skin (rabbit)	Not irritating.
	Eye (rabbit)	Not irritating.
Chronic Toxicity Data:	Inhalation (rat), for 21 days, dosed 6 hours per day, 5 days per week, at 3,300 ppm. No adverse effects of toxicological significance (NOAEL). At 10,000 ppm, there were signs of central nervous system depression. However, there were no signs of toxicity or histopathological changes observed, and no potentiation of cardiac sensitization potential.	
Ames Test:	Negative.	
Reproduction Toxicity:	Inhalation (rat), at 5,000, 10,000 and 15,000 ppm. Neither maternal or foetal toxicity was observed.	

Other Information:
Inhalation (dog): At 5,000 to 100,000 ppm resulted in cardiac sensitization above 20,000 ppm and in 10 to 0.5 minutes, depending on concentration.
Inhalation (human): At 4 to 5% for 1 minute using face mask, subjects at 30 seconds became slightly dizzy and light-headed. Over the next few seconds, these symptoms rapidly increased in severity until at 1 minute the subjects felt as though they were about to lose consciousness and exposure was stopped. Paraesthesia of the fingers and other parts of the body was sometimes noted towards the end of the experiment. Heart rate rose by approximately 30% during the early stages of exposure and remained at that level through the experiment. Depression of the T wave was consistently observed on the ECG tracings. The subjects recovered rapidly on cessation of exposure and felt perfectly normal again within 5 minutes. The heart rate and the ECG reverted to normal within 1 minute. There were no delayed after-effects.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity
Not determined because of complete partition to the atmosphere.

12.2. Mobility
Bromochlorodifluoromethane is a low boiling point gas and is practically insoluble in water.

12.3. Persistence and degradability
Photodegradation: >50% after 14 years.

12.4. Bioaccumulative potential
Not determined.

12.5. Other adverse effects

Ozone depletion potential:	Rated as 3 compared to trichlorofluoromethane nominally 1.
Photochemical ozone creation potential:	None.
Global warming potential:	May contribute to global warming.

13. DISPOSAL CONSIDERATIONS

Relative to the environment, this material has an ozone depletion potential and a global warming potential.
See Heading 12.
Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Class 2.2, UN1974.
Label: Nonflammable gas.
Chlorodifluorobromomethane or Refrigerant gas, R 12B1.

For additional transport information, contact Flag Fire.
Relative to the environment, this material has an ozone depletion potential and a global warming potential.
See Heading 12.

15. REGULATORY INFORMATION

EU Classification: Nonflammable Gas.
R Phrases: None.
S Phrases: 9 Keep container in a well-ventilated place.

Limit Values for Exposure:
None known.

EINECS Status: All components are included in EINECS inventories or are exempt from listing.
EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: Known to destroy ozone in the upper atmosphere.
Restrictions on Marketing and Use: Check on restrictions because of the environmental effects.
Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	2	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:
This product is rated **A – Compressed gas.**

Format is from directive 2001/58/EC.
EINECS data is from http://exb.jrc.it/existing-chemicals/

The EU Classification has been added in accordance with Directive 1999/45/EC and information in the EINICS ESIS files (Existing Substances Information System).
Toxicological information added from the EINICS ESIS (Existing Substances Information System).
Physical data added from the EINICS ESIS (Existing Substances Information System).

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

ANSUL

by Tyco Fire Suppression & Building Products

MATERIAL SAFETY DATA SHEET

HALON 1301

Issue Date: 10-14-2011

1. Product and Company Identification

Material name	HALON 1301
Version #	01
Revision date	10-14-2011
CAS #	75-63-8
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Contents under pressure. Heat may cause the containers to explode.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation.
Eyes	None known.
Skin	None known.
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Ingestion	Not a likely route of entry.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Components	CAS #	Percent
HALON 1301	75-63-8	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Flush thoroughly with water for at least 15 minutes. Get medical assistance.
Skin contact	Rinse with water.
Inhalation	Remove to fresh air.
Ingestion	Not likely, due to the form of the product.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters	
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Specific methods	None known.

6. Accidental Release Measures

Personal precautions	None known.
Environmental precautions	No special environmental precautions required.
Methods for containment	Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Not applicable.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Handle and open container with care.
Storage	Contents under pressure. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Material	Type	Value
HALON 1301 (75-63-8)	TWA	1000.0000 ppm

U.S. - OSHA

Material	Type	Value
HALON 1301 (75-63-8)	PEL	6100.0000 mg/m3 1000.0000 ppm
	TWA	6100.0000 mg/m3 1000.0000 ppm

Personal protective equipment

Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Color	Not available.
Odor	Not available.
Physical state	Gas.
pH	3.2 - 3.7 The pH of saturated CO2 solutions varies from 3.7 at 101 kPa (1 atm) to 3.2 at 2370 kPa (23.4 atm)
Melting point	-277.6 °F (-172 °C)
Freezing point	-277.6 °F (-172 °C)
Boiling point	-72.4 °F (-57.8 °C) 101.3232 kPa
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.

Vapor pressure	1626.53 kPa
Vapor density	3.8
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	0.3 g/l
Partition coefficient (n-octanol/water)	1.86
Auto-ignition temperature	Not available.
Decomposition temperature	Halon 1301 begins to decomp at 400-500 deg to halogen gases, which react with hydrogen to form hydrogen halides. In oxygen, carbon dioxide, carbonyl fluoride and carbonyl bromide may form. Hazards from decomp products are negligible as compared to those o Toxic gases and vapors (such as hydrogen bromide, hydrogen fluoride, and carbon monoxide) may be released when trifluoromonobromomethane decomp. Under certain conditions, fluorocarbon vapors may decomp on contact with flames or hot surfaces, creating potential hazard of inhalation of toxic decomp products.
VOC	Not available.
Molecular weight	148.91 g/mol
Molecular formula	C-Br-F3

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Excessive heat.
Hazardous decomposition products	Hydrogen fluoride.

11. Toxicological Information

Toxicological data

Product	Test Results
HALON 1301 (75-63-8)	Acute Inhalation LC50 Guinea pig: 88000 mg/l 450.00 Days Acute Inhalation LC50 Rat: 84000 mg/l 450.00 Days

* Estimates for product may be based on additional component data not shown.

Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.
Contaminated packaging	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1009
Proper shipping name	Bromotrifluoromethane
Hazard class	2.2
Subsidiary hazard class	2.2

Additional information:

Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315
ERG number	126

DOT

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HALON 1301 (CAS 75-63-8)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

HALON 1301 (CAS 75-63-8)	Listed.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No
Clean Water Act (CWA)	Toxic pollutant

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

HALON 1301 (CAS 75-63-8) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

HALON 1301 (CAS 75-63-8) Listed.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 0
Flammability: 0
Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date 10-14-2011

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: HALOTRON® I

OTHER/GENERIC NAMES: HCFC Blend B, Halotron® I Pre-Sat Base

PRODUCT USE: Halotron® I is a clean fire-extinguishing agent for streaming and local applications. NFPA 2001, *"Standard on Clean Agent Fire Extinguishing Systems"* defines a "Clean Agent" to be "electrically non-conducting, volatile, or gaseous fire extinguishant that does not leave a residue upon evaporation." Halotron® I is a safe, effective, environmentally acceptable clean agent. It is discharged as a liquid, which rapidly evaporates (i.e. it is volatile). It is a proprietary three component chemical blend based on HCFC-123 that is approved by the U.S. EPA under its Significant New Alternatives Policy (SNAP) program (referred to as "HCFC Blend B") for commercial/industrial, military, and maritime use in streaming applications as a substitute for halon 1211 (bromochlorodifluoromethane or "BCF").

MANUFACTURER: American Pacific Corporation, Halotron Division. 10622 West 6400 North, Cedar City, UT 84721

FOR MORE INFORMATION CALL: (435) 865-5000

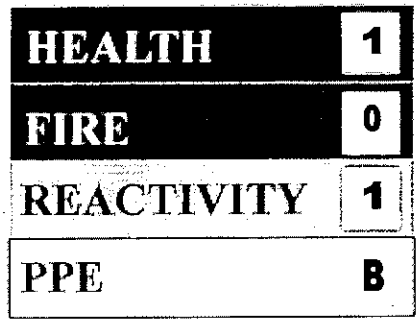
IN CASE OF EMERGENCY CALL: (435) 865-5044

2. COMPOSITION/INFORMATION ON INGREDIENTS

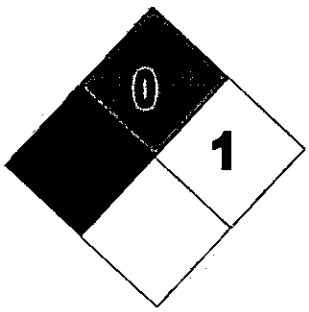
INGREDIENT NAME	CAS NUMBER	WEIGHT %
2,2-dichloro-1,1,1-trifluoroethane (HCFC-123)	306-83-2 (EC Number 206-190-3)	Greater than 93%
Proprietary Gas Mixture	Multiple, proprietary	Less than 7%

OSHA Hazard Communication Standard: This product is considered hazardous under the OSHA Hazard Communication Standard.

3. HAZARDS IDENTIFICATION



HMIS



NFPA

HMIS PERSONAL PROTECTIVE EQUIPMENT (PPE) DESIGNATIONS:

A:	SAFETY GLASSES
B:	SAFETY GLASSES, GLOVES
C:	SAFETY GLASSES, GLOVES, SYNTHETIC APRON
D:	FACE SHIELD, GLOVES, SYNTHETIC APRON
E:	SAFETY GLASSES, GLOVES, DUST RESPIRATOR
F:	SAFETY GLASSES, GLOVES, SYNTHETIC APRON, DUST RESPIRATOR
G:	SAFETY GLASSES, GLOVES, VAPOR RESPIRATOR
H:	SPLASH GOGGLES, GLOVES, SYNTHETIC APRON, VAPOR RESPIRATOR
I:	SAFETY GLASSES, GLOVES, COMBINATION DUST AND VAPOR RESPIRATOR
J:	SPLASH GOGGLES, GLOVES, SYNTHETIC APRON COMBINATION, DUST AND VAPOR RESPIRATOR
K:	AIRLINE HOOD OR MASK, GLOVES, FULL PROTECTIVE SUIT, BOOTS
X:	SITUATIONS REQUIRING SPECIALIZED HANDLING

EMERGENCY OVERVIEW:

Halotron I is a colorless volatile, pressurized liquid with a slight ether-like odor. As with any chemical, dose and exposure are critically important variables to understand any potential treatment. Short-term exposure to high concentrations may result in central nervous system and cardiac effects. Long-term exposure to concentrations above those time weighted averages recommended herein may result in liver effects.

HEALTH HAZARDS:

Inhalation: Inhalation of high concentrations of vapor may cause central nervous system effects such as dizziness, drowsiness, anesthesia, or unconsciousness. Anesthetic effects may occur at concentrations of 5000 ppm v/v or above. At concentrations of 20,000 ppm or higher, HCFC-123 may causes increased sensitivity of the heart to adrenaline which might cause irregular heart beats and possible ventricular fibrillation or death. Long-term exposure to concentrations above those time weighted averages recommended may cause liver damage with altered enzyme levels and central nervous system depression. When used on a fire, hazardous decomposition products are formed, but typically are within safe emergency exposure limits.

Eye contact: May cause irritation, tearing, or blurring of vision, which result in part due to the cooling effect of HCFC-123 evaporation.

Skin contact: Evaporative cooling can result in chilling sensations or frostbite effects. Repeated exposure to the skin can result in dermatitis. Prolonged skin contact should be avoided, but short-term contact is not considered hazardous.

Ingestion: Not likely to occur in industrial use. HCFC-123 is a highly volatile liquid.

This material is NOT LISTED by OSHA, NTP, or IARC as a CARCINOGEN.

Additional region specific information

European Union:

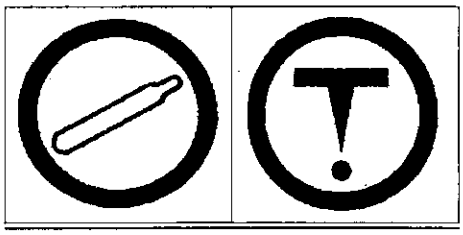
This chemical substance is not classified in the Annex I of Directive 67/548/EEC.

It is listed as a LPV

Canada:

Components are listed on the DSL.

WHMIS Hazard Symbols



Halotron® I Fire Extinguishing Agent:

Caution: Contains a compressed gas. High concentrations may cause cardiac arrhythmia and central nervous system depression, and possibly asphyxiation. May produce irritating vapors during use. Use of this material in confined spaces when personnel are present is acceptable only if the volume of the space is sufficiently large, as specified on UL listed fire extinguishers containing this product and guidance contained herein.

First Aid: See other section of this MSDS. Toxicity information is located in other sections of this MSDS.

4. FIRST AID MEASURES

Routes of exposure	Signs and symptoms of exposure:	Emergency and first aid procedures:
SKIN:	Evaporative cooling can result in chilling sensations or frostbite effects. Short exposures, such as when filling equipment or in other situations, should not have a lasting effect. Repeated exposure to the skin, however, can result in dermatitis.	If significant exposure occurs, wash exposed area immediately with large amounts of water. Remove contaminated clothing and footwear. Contact a physician if irritation occurs.
INHALATION:	Significant exposure may cause central nervous system effects such as dizziness, drowsiness, anesthesia, or unconsciousness. Anesthetic effects may occur at concentrations of 5000 ppm (v/v) or above. At concentrations of 20,000 ppm (v/v) or higher, HCFC-123 may cause increased sensitivity of the heart to adrenaline which might cause irregular heartbeats and possibly ventricular fibrillation or death.	If experiencing breathing difficulties, move to fresh air. Apply artificial respiration if necessary. Never give anything by mouth to an unconscious person. Contact a physician if breathing difficulties occur. Note to physician: This material may make the heart more susceptible to arrhythmias. Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.
INGESTION:	Not likely to occur in industrial use. Highly volatile liquid.	Do not induce vomiting; Give two glasses of water if ingestion occurs. Contact a physician
EYES:	Irritation and tearing may result from the cooling effect of HCFC-123 evaporation. Mild to moderate reversible eye damage, including irritation and corneal opacity has been seen in testing of undiluted HCFC-123.	Flush eyes with fresh water and move exposed person to a non-contaminated area. Contact a physician for cases where irritation or effects occur

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: None.
FLASH POINT METHOD: Not applicable.
AUTOIGNITION TEMPERATURE: Not determined.

UPPER FLAMMABILITY LIMIT (volume % in air): Not applicable.
LOWER FLAMMABILITY LIMIT (volume % in air): Not applicable.

EXTINGUISHING MEDIA: The properties of this chemical make it an ideal extinguishing media its self.

SPECIAL FIRE FIGHTING PROCEDURES: Ensure that the area where the fire occurred is well ventilated before re-entering. Wear protective clothing. Use water spray or fog to cool storage containers to help prevent an uncontrolled pressure release.

UNUSUAL FIRE AND EXPLOSION HAZARDS: The concentrated agent when applied to fire can produce toxic by-products specifically hydrogen halides, which can cause damage. Avoid inhalation of these materials by evacuating and ventilating the area.

6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE:

- In the event of a large spill, allow for adequate ventilation, and do not re-enter an area without an SCBA until adequate ventilation is accomplished.
- For spills that might result in overexposure, evacuate the area and use protective gear and SCBA's.
- Avoid leakage into waterways because HCFC-123 is damaging to vegetation.
- Do not expose storage containers to fire, as uncontrolled pressure releases may result.
- The HCFC-123 vapors are heavier than air; therefore use caution when large volume releases occur in low-lying areas where concentrated vapors may accumulate.
- Recommended 1 Hr. Emergency Exposure Limit: 1000 ppm (v/v) on the same basis as above.
- Recommended 1 Min. Emergency Exposure Limit: 2500 ppm (v/v) on the same basis as above.
- Any food items that were directly sprayed by the liquid should be thrown away, and all surfaces that are used for food service should be washed (as normal) before re-use.
- WASTE DISPOSAL: Observe all federal, state, and local regulations for products of this type when accomplishing disposal.
- SECTION 313 SUPPLIER NOTIFICATION: This product contains more than 93% by weight 2,2-dichloro-1,1,1-trifluoroethane (CAS #306-83-2) which is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40CFR372).

7. HANDLING AND STORAGE

NORMAL HANDLING: (See section 8 for recommended personal protective equipment.) Avoid prolonged contact with the skin and eyes. Avoid inhaling material and ensure that good ventilation is present when handling. Wash after handling and follow good personal hygiene and good housekeeping practices. Keep containers closed and transfer material using closed systems. Handle in a manner to minimize spills.

Additional Note: Approved DOT shipping containers are a normal safe method of storage. Containers should be maintained in good condition. Do not allow material to remain in deteriorating containers. Because this product can volatilize, special care should be taken for over pressurization hazards if the containers are overheated or near a radiant heat source. Protective shoes, such as steel toed shoes, should be worn in addition to the other specified personal protective equipment (PPE) when handling bulk containers. Eye protection with splash protective side shields should be used when any possibility of splash or spray exists

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Ventilate as necessary to minimize exposure levels. Inspect and clean ventilation systems regularly. Prolonged use should occur only in areas with adequate ventilation. Keep storage containers tightly closed. Vapors are heavier than air posing a potential hazard if large volumes are trapped in enclosed or low places.

PERSONAL PROTECTIVE EQUIPMENT:

- Wear protective clothing when handling a leak in a storage container (does not apply to fire protection equipment servicing, other than safety goggles and gloves if large volumes can be exposed to skin).
- Neoprene, PVC or PVA gloves should be worn when handling material for prolonged periods. Short exposures to skin are not likely to pose a hazard.•
  Respiratory protection is not normally needed, however, if handled in enclosed spaces where applicable exposure limits might be exceeded, a Self Contained Breathing Apparatus (SCBA) should be used.
- When performing filling or servicing operations, PERFORM THESE ACTIVITIES IN A WELL-VENTILATED AREA.
  If handling materials outside a closed, sealed system such that the possibility of splashing exists, wear safety glasses with side shields. This statement is not intended to apply to use of a fire extinguisher where the nozzle arrangement is intended to direct the discharge away from the user of the extinguisher.

TIME WEIGHTED EXPOSURE LIMITS: (For persons regularly exposed to material)

- Workplace Environmental Exposure Level, WEEL (AIHA) (8 hrs.): 50 ppm (v/v), based on the primary component (HCFC-123). See section 11 for more information.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Colorless	**PHYSICAL STATE:** Pressurized liquid	**VAPOR PRESSURE OF LIQUID ALONE:** (68°F, 20°C): approx. 11.2 psig (77 kPa)	**RELATIVE DENSITY (AIR=1):** 5.14	**ODOR:** Slight ether-like odor
OCTANOL/WATER PARTITION COEFFICIENT (Log P_{ow}): 2.0-2.8	**MOLECULAR WEIGHT:** Approx. 150.7	**PRESSURE OF MIXTURE IN CONTAINER:** (70°F, 20°C): 95 psig (655 kPa)	**BOILING POINT AT 1 ATM.:** 27°C (80.6°F)	**GAS DENSITY:** Approx. 6.17 kg/m^3 (0.385 lb./ft^3) **LIQUID DENSITY:** (77°F, 25°C): 92.3 lb./ft^3 (1.48 kg/l)
EVAPORATION RATE: Faster than water, slower than ether		**FLASH POINT:** Not flammable		

10. STABILITY AND REACTIVITY

STABILITY: Normally stable (will decompose if exposed to a high radiant heat source, such as fire). The material is intended for use as a fire extinguishant.

INCOMPATIBILITIES: Incompatible with alkali or alkaline earth metals, and powdered metals Al, Zn, Be, etc.

HAZARDOUS DECOMPOSITION PRODUCTS: Decomposition products are hazardous. This material can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming hydrochloric and hydrofluoric acids, and possibly carbonyl halide.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

TOXIC PROPERTIES OF COMPONENTS: Acute toxicity is low.

- **For 2,2-dichloro-1,1,1-trifluoroethane (CAS # 306-83-2):**
  LC50 (4 hr.): 3.2% (32,000 ppm), (Inhalation)
  Oral Approximate Lethal Dose (ALD): 9 g/kg (body weight)
  Cardiotoxic LOAEL (Lowest Observed Adverse Effect Level): 2%vol.
  Cardiotoxic NOAEL (No Observed Adverse Effect Level): 1%vol.
  Toxicological testing was performed on HCFC-123 by the Program for Alternative Fluorocarbon Testing (PAFT). Data from acute toxicity studies in this program demonstrated that HCFC-123 has very low toxicity by skin application or inhalation.

- **For the proprietary gas mixture:**
  The toxic effects of the proprietary gas mixture in the absence of extreme temperature are primarily its ability to function as a simple asphyxiant (i.e. displace oxygen).

OTHER TOXICITY INFORMATION:

- **Animal Studies: For 2,2-dichloro-1,1,1-trifluoroethane (CAS #306-83-2):**
  Long-term exposure in a two year study (6 hours/day, 5 days/week) at concentrations of 300, 1000 and 5000 ppm decreased body weight, serum cholesterol, triglycerides and glucose, and increased urinary fluoride concentrations in rats. However, survival was significantly improved in all exposed groups compared to control animals. Inhalation of 300, 1000 and 5000 ppm caused an increase in benign tumors of the liver, pancreas, and testis. Tumors occurred late in life and none were assessed to be life threatening. Tumor formation is thought to occur through non-genotoxic mechanisms associated with a peroxisome proliferating potential or with hormonal disturbances in older rats.

  Exposure to dogs, guinea pigs or monkeys at 1000 ppm or greater for 6 hrs. /day, 7 days per week, for a total of 3 weeks, induced slight or mild liver damage with altered enzyme levels.

  Rodent studies indicate HCFC-123 is easily absorbed via inhalation. It distributes in all organs, more so in the liver. About 90% of inhaled HCFC-123 is eliminated via the lungs unchanged. The remaining amount is metabolized to trifluoroacetic acid and excreted in the urine. Small amounts of trifluoroacetylated proteins were detected in rats in laboratory studies.

  HCFC-123 did not affect reproductive performance in rats or harm the unborn animals in rats or rabbits at 5000 and 10,000 ppm.

  HCFC-123 was inactive in several test-tube genetic damage studies except the human lymphocyte chromosome aberration assay. HCFC-123 is also inactive in live animal genetic damage studies. Therefore, it is not considered genotoxic.

  Carcinogen: IARC: NO NTP: NO OSHA: NO

12. ECOLOGICAL INFORMATION

Aquatic toxicity:

Slightly toxic, 96 hour LC_{50} –Fathead minnow's > 77mg/l

13. DISPOSAL CONSIDERATIONS

Observe all federal, state, and local regulations for products of this type when accomplishing disposal.

The manufacturer assumes no liability for the use of this product in a manner that causes environmental or other harm.

14. TRANSPORT INFORMATION

DOT SHIPPING NAME: UN1956, Compressed Gases, N.O.S., 2.2 (contains tetrafluoromethane, Argon),

DOT SHIPPING LABEL: Nonflammable Gas
IMCO CLASS: 2.2

It is recommended that DOT approved transport containers and carriers be used for shipment of this product.

NOTE: The transportation information above covers the Halotron I fire extinguishing agent as shipped in bulk containers, and not when contained in fire extinguishers or fire extinguishing systems. When shipped in a stored-pressure type fire extinguisher, and pressurized with argon gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/division is 2.2 Non-Flammable Gas. Packing Group – N/A.

15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)
TSCA INVENTORY STATUS: All components Listed on the TSCA Inventory.
OTHER TSCA ISSUES: None

SARA TITLE III/CERCLA "Reportable Quantities" (RQs) and/or "Threshold Planning Quantities" (TPQs) exist for the following ingredients. Listed only for Section 313 notification

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)

SECTION 313 SUPPLIER NOTIFICATION: This product contains more than 93% by weight 2,2-dichloro-1,1,1-trifluoroethane (CAS #306-83-2) which is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40CFR372).

Spills or releases resulting in the loss of any ingredient at or above its RQ (For those compounds where an RQ exists) require immediate notification to the National Response Center [(800) 424-8802], to the state where you are located, and to your Local Emergency Planning Committee or Fire Department.

SARA 313 TOXIC CHEMICALS: The following ingredients are SARA 313 "Toxic Chemicals" and may be subject to annual reporting requirements. CAS numbers and weight percents are found in Section 2

INGREDIENT NAME	SARA/CERCLA RQ (lb)	SARA EHS TPQ (lb)
2,2-dichloro-1,1,1-trifluoroethane (HCFC-123)	Not listed, Section 313 only	Section 313

No ingredients listed in this section.

STATE RIGHT-TO-KNOW In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

None of the components are listed under California Proposition 65. Tetrafluoromethane is listed under some US state's right to know act or lists

INGREDIENT NAME Halotron I Pre-Sat Base	SARA/CERCLA RQ (lb) Examine local regulations to determine	SARA EHS TPQ (lb)Examine local regulations to determine

ADDITIONAL REGULATORY INFORMATION:

Regulations

Listed in the Toxic Substances Control Act (TSCA) Inventory.: Yes , all components are on the TSCA Inventory
Listed on EPA SARA (313) Hazard Class, **Subject to reporting requirements of EPCRA Section 313**
All components listed in Canadian DSL.
HCFC 123 is listed under EINECS EC Number 206-190-3 as a low production volume chemical. All components of the proprietary gas mixture are listed in Einecs based on ESIS lookup.

Information about limitation of use: This blend is intended solely for use as a fire extinguishing agent and should not be used for other purposes without contact and technical discussion with the manufacturer.

16. OTHER INFORMATION

CURRENT ISSUE DATE: 02 January 2013

PREVIOUS ISSUE DATE: 23 April 2010

CHANGES TO MSDS FROM PREVIOUS ISSUE DATE ARE DUE TO THE FOLLOWING: In section 14 Changed sequence order (UN Number First)
Change H1 MSDS From: Compressed Gases, N.O.S., 2.2, UN1956 (contains Tetrafluoromethane, Argon)
Change H1 MSDS to read: UN1956, Compressed Gas, N.O.S., 2.2 (contains Tetrafluoromethane, Argon)

OTHER INFORMATION: The user is responsible to evaluate the safety and environmental consequences of any intended uses. The manufacturer assumes no liability for any usages that result in adverse consequences.

A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Halotron-1 (Fire Extinguishing Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Halotron-1 (Fire Extinguishing Agent)
Other Trade Names	HCFC Blend B, Halocarbon Agent
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Flammable Gas

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
Not considered carcinogenic by NTP, IARC, and OSHA.

Target Organs
Respiratory System - Eye - Cardiovascular System - Central Nervous System - Liver

Health Effects - Eyes
Direct contact with the cold liquid or gas may cause irritation with discomfort, tearing or blurring of vision.

Health Effects - Skin
Direct contact with the cold gas or liquid can cause cooling of exposed tissues.

Health Effects - Ingestion
Ingestion is not likely to occur during normal handling and use.

Health Effects - Inhalation
Short term exposure to vapor at high concentrations have the following effects: light headedness - dizziness - difficulty with breathing - drowsiness - nausea - mental confusion – irregular pulse - palpitations - loss of consciousness and death. Chronic overexposure may adversely affect the liver. Individuals with pre-existing disease of the central nervous system, cardiovascular system and liver will be at increased risk.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
2,2-dichloro-1,1,1-trifluoroethane	306-83-2 EC#206-190-3	>93%	None	Non Flammable Gas
Proprietary gas mixture	N.A.	<7%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of warm water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
For general skin exposure, apply large amounts of water. If frostbite occurs, gently warm affected areas. Obtain medical attention if blistering occurs or redness persists.

Ingestion
Do not induce vomiting. Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
Halotron-1 is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire. The concentrated agent when applied to fire can produce toxic by-products specifically hydrogen halides which can cause damage. Avoid inhalation of these materials by evacuating and ventilating the area.

Unusual Fire and Explosion Hazards
Containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Wear full protective clothing and self-contained breathing apparatus. Remove leaking cylinder to a safe place. Ventilate the area. Vapors can accumulate in low areas. Confined spaces should only be entered using a self-contained breathing apparatus.

7. HANDLING AND STORAGE

Cylinders should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike against each other. Never apply flame or localized heat directly to any part of the cylinder.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards

Workplace Environmental Exposure Level (chronic handling)

WEEL(AIHA)(8 hrs): 50 ppm (v/v), based on the primary component
Manufacturer's Recommended 1 Hr. Emergency Exposure Limit: 1000ppm (v/v)
Manufacturer's Recommended 1 Min. Emergency Exposure Limit: 2500ppm (v/v)

Exposure Level When Using Halotron I in a Fire Extinguisher

Exposure when using this material as a fire extinguishing agent - the exposure should not exceed 20,000 ppm (v/v). Guidelines for the safe minimum volume when this agent is used in a confined space are provided on the label of the extinguisher.

Engineering Control Measures

Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes or odor becomes apparent, use local exhaust ventilation.

Respiratory Protection

Not normally required under conditions of use as a portable fire extinguisher. In areas where the agent concentration is above acceptable levels, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Hand Protection

Wear rubber gloves. Avoid contact with skin.

Eye Protection

Chemical goggles or safety glasses with side shields. Avoid contact with eyes.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Pressurized Liquid
Color	Colorless
Odor	Slight ether
Boiling Range/Point (°C/F)	27°C/80.6°F
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	0.39% wt @25°C/ 77°F, 1 atm.
Relative Density (Air = 1)	5.14
Vapor Pressure of Liquid	~ 11.2 psig @ 68°F
	77 kPa @ 20°C
Liquid Density	92.3 lb/ft^3 @ 77 °F
	1.48 kg/l @ 25°C
Gas Density	~ 0.385 lb/ft^3
	~6.17 kg/m^3
Evaporation Rate	Not measured - readily volatilizes

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Avoid heating the storage cylinder above temperatures which will cause an overpressure to occur.

Materials to Avoid
Incompatible with alkali or alkaline earth metals, and powdered metals Al, Zn, Be, etc.

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
Hydrogen fluoride - hydrogen chloride - possibly carbonyl halides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity
For: 2,2-dichloro-1,1,1-trifluoroethane: Inhalation 4 hour, LC50(rat): 32,000 ppm
Oral ALD, rat: 9000 mg/kg
Dermal ALD, rabbit: >2000 mg/kg

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No data available.

Persistence/Degradability
No data available.

Bio-accumulation
No data available.

Ecotoxicity
For: 2,2-dichloro-1,1,1-trifluoroethane:
Aquatic Toxicity: slightly toxic
96 hour LC50- fathead minnows: >77mg/L

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. If spilled, contents will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

Bulk Shipments:	
DOT CFR 172.101 Data	Compressed Gases, n.o.s. (contains Tetrafluoromethane, Argon), 2.2, UN1956
UN Proper Shipping Name	Compressed Gases, n.o.s. (contains Tetrafluoromethane, Argon)
UN Class	(2.2) Non-Flammable Gas
UN Number	UN1956
UN Packaging Group	Not applicable
Fire Extinguishers:	
DOT CFR 172.101 Data	Fire extinguishers, 2.2, UN1044
UN Proper Shipping Name	Fire extinguishers, 2.2, UN1044
UN Class	(2.2) Non-Flammable Gas
UN Number	UN1044
UN Packaging Group	Not applicable

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

Non Flammable Gas

R phrases

None

S phrases

S9 Keep container in a well ventilated place.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS) or are exempt from listing.

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

15. REGULATORY INFORMATION

MA Right To Know Law
All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: argon (7440-37-1)

PA Right To Know Law
This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - argon (7440-37-1) - tetrafluoromethane (75-73-0)

NJ Right To Know Law
This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - argon (7440-37-1) - tetrafluoromethane (75-73-0)

California Proposition 65
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)
This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard - Pressure Hazard

SARA Title III Sect. 313
This product contains a chemical which is listed in Section 313 at or above de minimis concentrations: 2,2-dichloro-1,1,1-trifluoroethane (306-83-2)

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 1
NFPA Code for Special Hazards – None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 1
HMIS Code for Personal Protection - See Section 8

Abbreviations
ALD: Approximate Lethal Dose
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program

16. OTHER INFORMATION

IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

MATERIAL SAFETY DATA SHEET

LPS® HDX Heavy Duty Degreaser

Revision 5 **Revision Date11/26/08** **Supercedes: 5/10/05**

Section 1 – Identification

Product Name:	LPS® HDX Heavy Duty Degreaser
Part Number:	01020, 01001, 01005, 01055, C01020, C01001, C01005, C01055
Chemical Name:	Chlorinated Hydrocarbon (trichloroethylene)
Product Use:	A metal-cutting fluid designed to simultaneously cool and lubricate to reduce friction and eliminate chip welding in tapping, drilling, reaming and threading.
Manufacturer Information:	LPS Laboratories, 4647 Hugh Howell Rd., Tucker, GA, USA 30084
TEL:	1 770-243-8800
Emergency Telephone Number:	1-800-424-9300 Chemtrec; Outside U.S.: (703) 527-3887
FAX:	1 770-243-8899
Website:	http://www.lpslabs.com

PLAIN LANGUAGE HAZARD SUMMARY

Material Safety Data Sheets can be confusing. Federal and State laws require us to include a great deal of technical information that probably won't help the non-professional. LPS includes this "PLAIN LANGUAGE HAZARD SUMMARY" to address the questions and concerns of the average worker. If you have additional health, safety or product questions, don't hesitate to call us at 800/241-8334.

Worker Toxicity

LPS® HDX HEAVY-DUTY DEGREASER is a fast drying industrial cleaning solvent designed to remove soil and other contaminants from metal surfaces during production and maintenance operations. It contains trichloroethylene, which can be irritating to skin at a minimum and if handled improperly can be dangerous. We suggest you wear gloves and avoid extended exposure to unprotected skin. Don't get it in your eyes (it stings), or breath large amounts of the vapor, (it will dry out your nasal passages and if you breathe large amounts in poorly ventilated areas it can make you dizzy and even sick). Don't spray LPS® HDX HEAVY-DUTY DEGREASER for extended periods without adequate ventilation. If you're going to perform work involving a lot of product in a poorly ventilated area, use of a respirator or even a self-contained breathing apparatus maybe necessary. For more exposure and first aid information, refer to MSDS Sections 2, 8 and 11.

Flammability

LPS® HDX HEAVY-DUTY DEGREASER does not have a flash point, and is considered non-flammable. However, if forced to burn, it will produce a highly irritating and potentially dangerous smoke. Please refer to handling and storage section for further information.

Disposal

If you spill LPS® HDX HEAVY-DUTY DEGREASER, notify the proper environmental or safety department at your company right away. LPS® HDX HEAVY-DUTY DEGREASER has a RCRA hazardous waste classification of D003 (aerosol only), F001 and D040. Dispose of in accordance with municipal, provincial and federal regulations for chlorinated solvents. Recovered liquid may be sent to a licensed reclaimer or incinerator for hazardous wastes. Do not flush to the sewer. See section 13 for more details.

Section 2 – Hazards Identification

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Emergency Overview:
Aerosol: DANGER: Harmful or Fatal if Swallowed. Vapor Harmful. Contents under pressure.
Bulk: DANGER: Harmful or Fatal if Swallowed. Vapor Harmful.

Primary route(s) of entry: Skin and Eye contact. Inhalation.

Potential Acute Health Effects:

Eyes: Liquid in eyes produces pain and irritation with mild temporary damage possible. Vapor can irritate eyes.

Skin: Prolonged or repeated contact of liquid can cause skin irritation, defatting of skin, and dermatitis. Absorption of liquid through intact skin is possible, causing systemic poisoning, but this is an unlikely route of significant toxic exposure.

Inhalation: High concentrations of vapor, in excess of the occupational exposure limit, will lead to adverse effects on the central nervous system, causing nausea, headaches, dizziness and lightheadedness (concentrations in excess of 300ppm). Higher concentrations, around 5000ppm and above, will cause anesthetic effects, leading to unconsciousness and in extreme cases, coma and death. Very high exposures may cause an abnormal heart rhythm and prove suddenly fatal.

Ingestion: Product has a low order of acute oral toxicity, but ingestion of large quantities may cause nausea, vomiting, and gastrointestinal irritation. May cause injury if aspirated into lungs causing adverse health effects as described in the inhalation section above.

Potential Chronic Health Effects:

Carcinogenic Effects: See Section 11
NTP: Suspect Carcinogen **IARC:** Group 2A **OSHA:** No

Mutagenic Effects: Has been linked to mutagenic effects in humans.

Teratogenic Effects: Did not cause birth defects in laboratory animals. Has been toxic to the fetus in lab animals at levels toxic to the mother.

Target Organs:
In animals, effects have been reported on the following organs: Kidney, Liver, Central nervous system, Peripheral nervous system.

Medical conditions aggravated by exposure:
Repeated exposure to high levels produces adverse effects on the liver and, to a lesser extent on the kidney. A condition known as 'Degreaser's Flush', a pronounced redness of the skin, may occur on the face, hands, arms, feet and trunk of some individuals following repeated exposure to trichloroethylene and the consumption of alcohol.
This effect can intensify over a 30 minute period but usually disappears completely after 1 hour.
These symptoms may occur up to 6 weeks after the last exposure to trichloroethylene and can reoccur if exposure continues.
Interactions with other chemicals which enhance toxicity: Consumption of alcoholic beverages may increase potential for development of toxic effects resulting from exposure to this product.

Signs and Symptoms:
Stinging in eyes. Repeated or prolonged skin contact can cause redness, irritation, and scaling of the skin (dermatitis). Breathing of high vapor concentrations may cause headaches, stupor, irritation of throat and eyes, and kidney effects.

Section 3 – Composition / Information on Ingredients

Component	CASRN	Weight Percent
Trichloroethylene	79-01-6	90 – 100%
Carbon Dioxide (aerosol only)	124-38-9	1 – 10%

Section 4 – First Aid Measures

Eyes: Check for and remove contact lenses. If irritation or redness develops, flush eyes with cool, clean, low pressure water for at least 15 minutes. Hold eyelids apart to ensure complete irrigation of the eye and eyelid tissue. Do not use eye ointment. Seek medical attention immediately.

Skin: Remove contaminated shoes and clothing. Clean affected area thoroughly with mild soap and water. Do not use ointments. Seek medical attention if irritation persists.

Inhalation: Immediately move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). If breathing is difficult, seek medical attention immediately.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Do not leave victim unattended. Seek medical attention immediately.

Notes to Physician: Chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamine's so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

Section 5 – Fire Fighting Measures

Products of Combustion: Carbon monoxide, carbon dioxide, chlorine, hydrogen chloride and traces of phosgene.

Firefighting media: Use CO_2, DRY chemical powder, water spray, fog or foam. Cool containing vessels with water jet in order to prevent pressure build-up, auto ignition or explosions.

Sensitivity to Impact: None. **Sensitivity to Static Discharge:** None

Protection Clothing (Fire): Concentrated vapors can be ignited by high intensity ignition source. Firefighters should wear self-contained, positive pressure breathing apparatus and full protective clothing due to thermal decomposition products.

Special Remarks on Explosion Hazards: Explosive mixtures of trichloroethylene and air can be formed, but are difficult to ignite and require high intensity sources of heat, such as welding arcs, sparks and flames or high temperatures and pressures; addition of small amounts of flammable substances to trichloroethylene (such as flammable liquids or gases) and / or an increase in the oxygen content of the local atmosphere, may strongly enhance these effects. Welding or cutting should not be carried out on any vessel likely to contain solvent because of the risk of explosion. Thermal decomposition will evolve toxic and corrosive vapors of hydrogen chloride and phosgene. Containers may burst if overheated due to thermal expansion of the contents.

Section 6 – Accidental Release Measures

Containment Procedures	**Small Spill and Leak:**	Absorb with an inert material and dispose of properly.
	Large Spill and Leak:	Dike far ahead of a liquid spill to ensure complete collection. Pick up free liquid for disposal using absorbent pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal. Do not allow to enter drains, sewers or waterways. Spillages or uncontrolled discharges into waterways must be alerted to the Environment Agency or other appropriate regulatory body.
Clean-Up Procedures	Recover free product and place in suitable container for disposal. Do not allow to enter drains, sewers or waterways. Spillages or uncontrolled discharges into waterways must be alerted to the Environment Agency or other appropriate regulatory body.	
Evacuation Procedures	Ventilate area of leak or spill. Keep unnecessary and unprotected people away.	
Special Procedures	Ventilate area. Wear appropriate protective equipment during cleanup.	

Section 7 – Handling and Storage

Handling: Do not breathe vapor. Use only in well ventilated areas. Avoid contact with skin and eyes.
Avoid contact with naked flames and hot surfaces as toxic and corrosive decomposition products (hydrogen chloride) can be formed. The vapor is heavier than air and may reach dangerously high concentrations in pits, tanks, and other confined spaces. In such cases provide adequate ventilation or wear suitable respiratory protective equipment with positive air supply. When using, do not smoke. When welding metals degreased with trichloroethylene, special care is needed to ensure all solvent has evaporated from the components. Separate cleaning and welding areas. Ensure vapors from degreasing operations do not enter welding areas - welding arcs can cause trichloroethylene vapors to break down producing toxic vapors.

Storage: Keep container dry. Keep in a cool, well ventilated place. Keep away from direct sunlight. Keep away from heat and sources of ignition.

Section 8 – Exposure Controls / Personal Protection

Exposure Guidelines:

Component	CASRN	OSHA TWA-PEL	OSHA STEL	ACGIH-TLV	ACGIH-STEL	NIOSH REL
Trichloroethylene	79-01-6	100 ppm	200 ppm	50 ppm	100 ppm	Not Established
Carbon Dioxide (aerosol only)	124-38-9	5000 ppm	Not Established	5000 ppm	30000 ppm	5000 ppm TWA 30000 ppm STEL

Engineering measures	Provide general and/or local exhaust ventilation to keep exposures below the exposure guidelines listed above. Lethal concentrations may exist in areas with poor ventilation.

Personal protective equipment

Eye protection	Safety glasses with side shields conforming to appropriate regulations. Eye wash fountain and emergency shower facilities are recommended.
Hand protection	Use laminate gloves chemically resistant to this material and conforming to appropriate regulations. Please observe the instructions regarding permeability and breakthrough time that are provided by the supplier of the gloves. Take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.
Respiratory protection	If airborne concentrations are above the applicable exposure limits (listed above), use NIOSH approved respiratory protection.

Section 9 – Physical and Chemical Properties

Appearance:	Clear liquid.	**Color:**	Clear, light brown
Odor/Taste:	Sweet, spice.	**Evaporation Rate:**	0.3 (Ethyl Ether =1)
Solubility Description:	0.1% in water	**Flash Point (°C):**	None
Odor Threshold:	Not Established	**Decomposition Temperature:**	Not Established
Boiling Point:	87°C (189°F)	**Auto Ignition Temperature:**	>420°C(788°F)
Specific Gravity (Water=1):	1.35 @ 20 °C	**Partition Coefficient (octanol/water):**	2.4
Vapor Density (Air=1):	4.5	**Volatiles:**	90%
Vapor Pressure:	58 mmHg @ 20°C	**V.O.C. content**	87%,1169 g/L, 9.8#/gal per CARB definition
pH:	Not applicable	**Viscosity:**	0.391 cSt
Flammable limits (estimated):	LOWER: 8% UPPER:10.5%	**Melting Point (°C):**	Not Applicable

Section 10 – Chemical Stability and Reactivity

Chemical Stability: Product is stable under recommended storage conditions.

Conditions to Avoid: Keep away from red hot surfaces, sparks or naked flames which may generate toxic fumes of phosgene and hydrogen chloride. Prolonged contact with aluminum or light alloys may cause a reaction resulting in the generation of hydrogen chloride gas and heat.

Incompatibility: Extremely reactive or incompatible with oxidizing agents. Reacts violently with sodium, potassium, barium metal. Reacts with finely divided aluminum, zinc and magnesium.

Hazardous Decomposition: Combustion will generate smoke, possibly thick and choking, resulting in zero visibility and combustion products include hydrogen chloride and traces of phosgene gas.

Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information

General Product Information

Acute Toxicity: An acute toxicity study of this product has not been conducted. Information given in this section relates only to individual constituents contained in this preparation.

Trichloroethylene: 200 ppm causes mild eye irritation. 400 ppm causes slight eye irritation and minimal light-headedness after 3 hours. 1,000 to 1,200 ppm after 6 minutes causes eye and nasal irritation, light-headedness and dizziness. 2,000 ppm cannot generally be tolerated, is irritating to the eyes and respiratory tract and causes drowsiness, dizziness and nausea within 5 minutes. Ventricular arrhythmias and very rapid respiration have been observed in individuals exposed to 15,000 ppm. High concentrations or prolonged overexposure can cause unconsciousness and death.

Component Analysis

Component	CASRN	LC-50	LD-50
Trichloroethylene	79-01-6	12500ppm/4H/rat*	4920 mg/kg/oral/rat* ~10000mg/kg/rabbit/dermal*

***Supplier Data**

Carcinogenicity:

NTP: Suspected carcinogen **IARC:** (2A) probable carcinogen **OSHA:** No

Trichloroethylene has been shown to cause cancer in animals. Mechanistic studies have shown that some of these observations are not relevant for humans. Some experts believe that repeated exposure to high concentrations of trichloroethylene may cause kidney cancer, although the evidence for a causal relationship between these events is far from conclusive. None of the toxic effects of trichloroethylene will occur provided that exposures are kept below the current TLV.
The International Agency for Research on Cancer (IARC) has concluded that with respect to trichloroethylene, there is sufficient evidence of carcinogenicity to experimental animals and limited evidence of carcinogenicity to humans, resulting in a classification in Group 2A as a substance probably carcinogenic to humans. NTP has classified trichloroethylene as reasonably anticipated to be a human carcinogen.

Mutagenicity: Rodent - rat /1000 ppm/4H Brain and Coverings - changes in surface EEG Peripheral Nerve and Sensation - sensory syndrome diagnostic of central lesion Sense Organs and Special Senses (Eye) RTECS# KX4550000. Trichloroethylene has been linked to mutagenic effects in humans. Some studies measuring DNA damage (strand breaks, unscheduled DNA synthesis, in-vitro and in-vivo micronucleus and chromosomal aberrations) have been positive.

Neurotoxicity: Rodent - rat /1000 ppm/4H Brain and Coverings - changes in surface EEG Peripheral Nerve and Sensation - sensory syndrome diagnostic of central lesion Sense Organs and Special Senses (Eye) RTECS# KX4550000.

Reproductive Toxicity: Did not cause birth defects in laboratory animals; has been toxic to the fetus in lab animals at levels toxic to the mother.

Note to Physician: Gastric lavage may be effective within four hours of ingestion. Product is an asphyxiant and can induce cardiac muscular sensitization to circulating epinephrine-like compounds, resulting in potentially fatal heart arrhythmias. Do not give adrenaline or similar sympathomimetic drugs. Do not allow exposed person to exercise vigorously for 24 hours following potentially toxic exposure.

Section 12 – Ecological Information

Mobility:	High mobility in soil and sediment	**Persistence and degradability:**	Not readily biodegradable
Bioaccumulative potential:	Minimal bioaccumulation potential	**Other Adverse Effects:**	See below

Other adverse effects: Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment. This product has potential for leaching.

Environmental Fate: When released into the soil, trichloroethylene is expected to quickly evaporate, but large spills have potential to leach into groundwater. When released to water trichloroethylene will quickly evaporate, but large spills are expected to be slightly toxic to aquatic life. When released into the air, trichloroethylene is expected to have a half-life between 1 and 10 days.

Environmental Toxicity: The LC50/96-hour values for trichloroethylene in fish are between 10 and 100 mg/l. Trichloroethylene has an experimentally-determined bioconcentration factor (BCF) of less than 100 and is not expected to significantly bioaccumulate.

Ecotoxicology:

Effect on Organisms	Component	CASRN	Test	Species	Results
Acute Toxicity on Fishes	Trichloroethylene	79-01-6	96h-LC_{50}	Pimephales promelas	41-67 mg/L*
Acute Toxicity on Daphnia	Trichloroethylene	79-01-6	48h-LC_{50}	Daphnia magna	2.2-100 mg/L*
Bacterial inhibition	Trichloroethylene	79-01-6	EC_{50}	Unidentified microorganism	260 mg/L*
Growth inhibition of algae	Trichloroethylene	79-01-6	24h-EC_{50}	Algae	410 mg/L*
Bioaccumulation in fish	Trichloroethylene	79-01-6	BCF	Fish species (unidentified)	17-90*

* Supplier Data

Section 13 – Disposal Considerations

Waste Status: Per 40 CFR 261.7 aerosol versions of this product, if disposed of in its received form, carry waste code(s) D040 and D003. Per 40 CFR 261.7 (U.S.) bulk versions of this product, if disposed of in its received form, carries waste code D040.

Disposal: Waste must be disposed of in accordance with national, regional, provincial, and local environmental control regulations.

Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information inaccurate, incomplete, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive than federal laws and regulations.

Section 14 – Transportation Information

Aerosol

D.O.T. Ground	**Shipping Name:**	Consumer Commodity	**UN Number:**	1950
	Hazard Class:	ORM-D	**Technical Name:**	N/A
	Subclass:	N/A	**Hazard Label:**	ORM-D Already on box
Road/Rail - ADR/RID	**UN no:**	1950	**ADR Class:**	2
	Packing group:	NA	**Classification code:**	5T
	Name and Description:	AEROSOLS, toxic	**Hazard ID no:**	NA
	Labeling:	2.2, 6.1		
IMDG-IMO	**UN no:**	1950	**Class:**	2
	Shipping Name:	Aerosols	**Subsidiary Risk:**	NA
	Packing Instructions:	P003, LP02	**Packing group:**	NA
	Marine pollutant:	NO	**EmS:**	F-D, S-U
IATA-ICAO	**UN no:**	1950	**Class:**	2.2
	Shipping Name:	Aerosols. Non-flammable, containing substances in division 6.1, Packing Group III	**Subclass**	6.1
	Packing instructions:	203, Y203 (Ltd. Qty.)	**Packing group:**	III
	Labeling:	Non-flammable Gas & Toxic		

Bulk

D.O.T. Ground	**Shipping Name:**	Trichloroethylene	**UN Number:**	1710
	Hazard Class:	6.1	**Technical Name:**	N/A
	Subclass:	N/A	**Hazard Label:**	6.1
Road/Rail - ADR/RID :	**UN no:**	1710	**ADR Class:**	6.1
	Packing group:	III	**Classification code:**	T1
	Name and Description:	Trichloroethylene	**Hazard ID no:**	N/A
	Labeling:	6.1		
IMDG-IMO	**UN no:**	1710	**Class:**	6.1
	Shipping Name:	Trichloroethylene	**Subsidiary Risk:**	NA
	Packing Instructions:	P001, LP01	**Packing group:**	III
	Marine pollutant:	NO	**EmS:**	F-A, S-A
IATA-ICAO:	**UN no:**	1710	**Class:**	6.1
	Shipping Name:	Trichloroethylene	**Subclass**	NA
	Packing instructions:	NA	**Packing group:**	NA
	Labeling:	Non-flammable Gas		

Section 15 – Regulatory Information

U.S. Federal Regulations

RCRA Hazardous Waste No.: D040, D003 (aerosols only)

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): Trichloroethylene 79-01-6 100 lbs

Toxic Substances Control Act (TSCA):
All components of this product are TSCA inventory listed and/or are exempt.

Superfund Amendments and Reauthorization Act (SARA) Title III
SARA Section 311/312 (40 CFR 370) Hazard Categories: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372): Trichloroethylene 79-01-6

Section 112 Hazardous Air Pollutants (HAPs): Trichloroethylene 79-01-6

State Regulations

California: This product contains chemical(s) known to the State of California to cause cancer, birth defects or reproductive harm.

New Jersey Right to Know:
Trichloroethylene 79-01-6 ● 1, 2 Butylene Oxide 106-88-7 ● Methyl Pyrrole 96-54-8 ● Butanone 78-93-3 ● Carbon Dioxide 124-38-9 (aerosol only)

International Regulations

Canadian Environmental Protection Act: All of the components of this product are included on the Canadian Domestic Substances list (DSL).

Canadian Workplace Hazardous Materials Information System WHMIS:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS Classification:

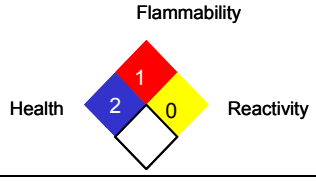
Aerosol
Class A, Class D1B, Class D2A, D2B

Bulk
Class D1B, Class D2A, D2B

Other Regulations

Montreal Protocol listed ingredients:	None.
Stockholm Convention listed ingredients:	None.
Rotterdam Convention listed ingredients:	None.
RoHS Compliant:	Yes.

Section 16 • Other Information

MSDS#11020 **Responsible Name:** **Clea Johnson** **Regulatory Affairs Coordinator**	**HMIS 1996**		**HMIS III**		**NFPA**
	Health:	2	Health:	2*	
	Flammability:	1	Flammability:	1	
	Reactivity	0	Physical Hazard: aerosol	2	
			Physical Hazard: bulk	0	

Notice to Reader:
To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Clea Johnson, Regulatory Affairs Coordinator
LPS Laboratories, A division of Illinois Tool Works

AIR PRODUCTS

Material Safety Data Sheet

Version 1.5
Revision Date 04/04/2004

MSDS Number 300000000067
Print Date 04/14/2004

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Helium
Chemical formula	:	He
Synonyms	:	Helium, Helium gas, Gaseous helium, Balloon gas
Product Use Description	:	General Industrial
Company	:	Air Products and Chemicals,Inc 7201 Hamilton Blvd. Allentown, PA 18195-1501
Telephone	:	800-345-3148
Emergency telephone number	:	800-523-9374 USA 01-610-481-7711 International

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Volume)
Helium	7440-59-7	100 %

Concentration is nominal. For the exact product composition, please refer to Air Products technical specifications.

3. HAZARDS IDENTIFICATION

Emergency Overview

High pressure gas.
Can cause rapid suffocation.
Self contained breathing apparatus (SCBA) may be required.

Potential Health Effects

Inhalation	:	In high concentrations may cause asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.
Eye contact	:	No adverse effect.
Skin contact	:	No adverse effect.
Ingestion	:	Ingestion is not considered a potential route of exposure.
Chronic Health Hazard	:	Not applicable.

Exposure Guidelines

Primary Routes of Entry	:	Inhalation
Target Organs	:	None known.
Symptoms	:	Exposure to oxygen deficient atmosphere may cause the following symptoms: Dizziness. Salivation. Nausea. Vomiting. Loss of mobility/consciousness.

Aggravated Medical Condition

None.

Environmental Effects

Not harmful.

4. FIRST AID MEASURES

General advice	:	Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Eye contact	:	Not applicable.
Skin contact	:	Not applicable.
Ingestion	:	Ingestion is not considered a potential route of exposure.
Inhalation	:	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. In case of shortness of breath, give oxygen.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	All known extinguishing media can be used.
Specific.hazards	:	Upon exposure to intense heat or flame, cylinder will vent rapidly and or rupture violently. Product is nonflammable and does not support combustion. Move away from container and cool with water from a protected position. Keep containers and surroundings cool with water spray.
Special protective equipment for fire-fighters	:	Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Evacuate personnel to safe areas. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Monitor oxygen level. Ventilate the area.
Environmental precautions	:	Do not discharge into any place where its accumulation could be dangerous. Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	:	Ventilate the area.

Additional advice	:	If possible, stop flow of product. Increase ventilation to the release area and monitor oxygen level. If leak is from cylinder or cylinder valve, call the Air Products emergency telephone number. If the leak is in the user's system, close the cylinder valve, safely vent the pressure, and purge with an inert gas before attempting repairs.

7. HANDLING AND STORAGE

Handling

Protect cylinders from physical damage; do not drag, roll, slide or drop. Do not allow storage area temperature to exceed 50°C (122°F). Only experienced and properly instructed persons should handle compressed gases. Before using the product, determine its identity by reading the label. Know and understand the properties and hazards of the product before use. When doubt exists as to the correct handling procedure for a particular gas, contact the supplier. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Use an adjustable strap wrench to remove over-tight or rusted caps. Before connecting the container, check the complete gas system for suitability, particularly for pressure rating and materials. Before connecting the container for use, ensure that back feed from the system into the container is prevented. Ensure the complete gas system is compatible for pressure rating and materials of construction. Ensure the complete gas system has been checked for leaks before use. Employ suitable pressure regulating devices on all containers when the gas is being emitted to systems with lower pressure rating than that of the container. Never insert an object (e.g. wrench, screwdriver, pry bar, etc.) into valve cap openings. Doing so may damage valve, causing a leak to occur. Open valve slowly. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Close container valve after each use and when empty, even if still connected to equipment. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Close valve after each use and when empty. Replace outlet caps or plugs and container caps as soon as container is disconnected from equipment. Do not subject containers to abnormal mechanical shocks which may cause damage to their valve or safety devices. Never attempt to lift a cylinder by its valve protection cap or guard. Do not use containers as rollers or supports or for any other purpose than to contain the gas as supplied. Never strike an arc on a compressed gas cylinder or make a cylinder a part of an electrical circuit. Do not smoke while handling product or cylinders. Never re-compress a gas or a gas mixture without first consulting the supplier. Never attempt to transfer gases from one cylinder/container to another. Always use backflow protective device in piping. When returning cylinder install valve outlet cap or plug leak tight. Never use direct flame or electrical heating devices to raise the pressure of a container. Containers should not be subjected to temperatures above 50°C (122°F). Prolonged periods of cold temperature below -30°C (-20°F) should be avoided.

Storage

Full containers should be stored so that oldest stock is used first. Containers should be stored in a purpose build compound which should be well ventilated, preferably in the open air. Stored containers should be periodically checked for general condition and leakage. Observe all regulations and local requirements regarding storage of containers. Protect containers stored in the open against rusting and extremes of weather. Containers should not be stored in conditions likely to encourage corrosion. Containers should be stored in the vertical position and properly secured to prevent toppling. The container valves should be tightly closed and where appropriate valve outlets should be capped or plugged. Container valve guards or caps should be in place. Keep containers tightly closed in a cool, well-ventilated place. Store containers in location free from fire risk and away from sources of heat and ignition. Full and empty cylinders should be segregated. Do not allow storage temperature to exceed 50°C (122°F). Return empty containers in a timely manner.

Technical measures/Precautions

Containers should be segregated in the storage area according to the various categories (e.g. flammable, toxic, etc.) and in accordance with local regulations. Keep away from combustible material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide natural or mechanical ventilation to prevent oxygen deficient atmospheres below 19.5% oxygen.

Personal protective equipment

Respiratory protection	:	Self contained breathing apparatus (SCBA) or positive pressure airline with mask are to be used in oxygen-deficient atmosphere. Air purifying respirators will not provide protection. Users of breathing apparatus must be trained.
Hand protection	:	Sturdy work gloves are recommended for handling cylinders. The breakthrough time of the selected glove(s) must be greater than the intended use period.
Eye protection	:	Safety glasses recommended when handling cylinders.
Skin and body protection	:	Safety shoes are recommended when handling cylinders.
Special instructions for protection and hygiene	:	Ensure adequate ventilation, especially in confined areas.
Remarks	:	Simple asphyxiant.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	Compressed gas.
Color	:	Colorless gas
Odor	:	No odor warning properties.
Molecular Weight	:	4 g/mol
Relative vapor density	:	0.138 (air = 1)
Density	:	0.012 lb/ft3 (0.0002 g/cm3) at 70 °F (21 °C) Note: (as vapor)
Specific Volume	:	96.68 ft3/lb (6.0349 m3/kg) at 70 °F (21 °C)
Boiling point/range	:	-452 °F (-268.9 °C)
Critical temperature	:	-450 °F (-267.9 °C)
Water solubility	:	0.0015 g/l

10. STABILITY AND REACTIVITY

Stability : Stable under normal conditions.

Hazardous decomposition products : None.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion : No data is available on the product itself.

Inhalation : No data is available on the product itself.

Skin. : No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to other organisms : No data available.

Persistence and degradability

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

Further information

This product has no known eco-toxicological effects.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products : Contact supplier if guidance is required. Return unused product in orginal cylinder to supplier.

Contaminated packaging : Return cylinder to supplier.

14. TRANSPORT INFORMATION

CFR

Proper shipping name : Helium, compressed
Class : 2.2
UN/ID No. : UN1046

IATA

Proper shipping name	: Helium, compressed
Class	: 2.2
UN/ID No.	: UN1046

IMDG

Proper shipping name	: HELIUM, COMPRESSED
Class	: 2.2
UN/ID No.	: UN1046

CTC

Proper shipping name	: HELIUM, COMPRESSED
Class	: 2.2
UN/ID No.	: UN1046

Further Information
Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.

15. REGULATORY INFORMATION

OSHA Hazard Communication Standard (29 CFR 1910.1200) Hazard Class(es)
Compressed Gas.

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on Inventory.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification:
Sudden Release of Pressure Hazard.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

16. OTHER INFORMATION

NFPA Rating

Health	: 0
Fire	: 0

Instability	: 0
Special	: SA

HMIS Rating

Health	: 0
Flammability	: 0
Physical hazard	: 3

Prepared by : Air Products and Chemicals, Inc. Global EH&S Product Safety Department

For additional information, please visit our Product Stewardship web site at
http//www.airproducts.com/productstewardship/

Safety Data Sheet
acc. to OSHA HCS

Printing date 12/10/2013 Revised On 12/10/2013

1 Identification of the substance and manufacturer

Trade name: HI TECH TRUE RED

Product code: 0000160122

Manufacturer/Supplier:
Seymour of Sycamore
917 Crosby Avenue
Sycamore, IL 60178
Phone: 815-895-9101
www.seymourpaint.com

Emergency telephone number: CHEMTEL 1-800-255-3924, 813-248-0585 *if located outside the U.S.*

2 Composition/information on ingredients

Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:

67-64-1	Acetone	35.28%
74-98-6	propane	15.75%
108-88-3	Toluene	11.07%
106-97-8	n-butane	9.25%
108-65-6	PM acetate	4.55%
107-87-9	Methyl Propyl Ketone	3.21%
2807-30-9	Glycol Ether EP	1.45%

3 Hazard(s) identification

Hazard Information for people and the environment:
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C, i.e. electric lights. Do not pierce or burn, even after use.
Extremely flammable liquid and vapor in a pressurized container. Keep away from heat, sparks, and flame.
Has narcotizing effect.

Risk phrases:
Extremely flammable.
Irritating to eyes.
Harmful: danger of serious damage to health by prolonged exposure through inhalation.
Possible risk of harm to the unborn child

Safety phrases:
Keep out of the reach of children.
Keep away from sources of ignition - No smoking.
Do not breathe gas/fumes/vapour/spray.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point
Wear suitable protective clothing and gloves.
If swallowed, seek medical advice immediately and show this container or label.
Use only in well-ventilated areas.

Effects of chronic overexposure: May cause permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart, and blood. Intentional misuse by deliberately inhaling the contents may be harmful or fatal.

NFPA ratings (0 - 4):
Health = 1
Fire = 4
Reactivity = 3

HMIS-ratings (0 - 4):
Health= 1
Fire= 4
Physical Hazard= 3

4 First-aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.

After eye contact: Move to fresh air. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Contact physician or poison control center.

5 Fire-fighting measures

Extinguishing agents: CO2, sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards: No further relevant information available.

Protective equipment for firefighters: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.

Environmental precautions: Do not allow product to reach sewage systems or ground water.

(Contd. on page 2)

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Trade name: HI TECH TRUE RED

(Contd. of page 1)

Methods and material for containment and cleaning up: Ensure adequate ventilation.

7 Handling and storage

Fire/explosion protection: Do not spray on a naked flame or any incandescent material. Do not smoke. Protect from electrostatic discharges.

Storage requirements: Observe pressurized container storage regulations. Consult with your local authorities.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:

67-64-1 Acetone

PEL	Long-term value: 2400 mg/m³, 1000 ppm
REL	Long-term value: 590 mg/m³, 250 ppm
TLV	Short-term value: (1782) NIC-1187 mg/m³, (750) NIC-500 ppm Long-term value: (1188) NIC-475 mg/m³, (500) NIC-200 ppm BEI

74-98-6 propane

PEL	Long-term value: 1800 mg/m³, 1000 ppm
REL	Long-term value: 1800 mg/m³, 1000 ppm
TLV	refer to Appendix F: minimal oxygen content

108-88-3 Toluene

PEL	Short-term value: C 300; 500* ppm Long-term value: 200 ppm *10-min peak per 8-hr shift
REL	Short-term value: 560 mg/m³, 150 ppm Long-term value: 375 mg/m³, 100 ppm
TLV	Long-term value: 75 mg/m³, 20 ppm BEI

106-97-8 n-butane

REL	Long-term value: 1900 mg/m³, 800 ppm
TLV	Short-term value: 2370 mg/m³, 1000 ppm

108-65-6 PM acetate

WEEL	Long-term value: 50 ppm

107-87-9 Methyl Propyl Ketone

PEL	Long-term value: 700 mg/m³, 200 ppm
REL	Long-term value: 530 mg/m³, 150 ppm
TLV	Short-term value: 529 mg/m³, 150 ppm

Ingredients with biological limit values:

67-64-1 Acetone

BEI	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)

108-88-3 Toluene

BEI	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

Hygienic protection: Keep away from foodstuffs and animal feed. Wash hands after use.

Breathing equipment: A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygeine.

Hand protection: Protective gloves. The glove material must be impermeable and resistant to the substance. No glove recommendation can be given.

Eye protection: Tightly sealed goggles

(Contd. on page 3)

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Trade name: HI TECH TRUE RED

(Contd. of page 2)

9 Physical and chemical properties

Odor: Aromatic

pH-value: Not determined.
Boiling point: -44 °C (-47 °F)

Flash point: -19 °C (-2 °F)

Auto igniting: Product is not self-igniting.

Danger of explosion: Stable at normal temperatures. Can may burst when exposed to temperatures exceeding 120 degrees fahrenheit.
In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit: 1.7 Vol %
Upper Explosion Limit: 10.9 Vol %
Vapor Pressure: 40 PSI, 2750 hPa
Specific Gravity: Between 0.77 and 0.85 (Water equals 1.00)

VOC content: 523.7 g/l / 4.37 lb/gl
VOC content (less exempt solvents): 46.3 %
MIR Value: 1.08

Solids content: 18.3 %
Other information No further relevant information available.

10 Stability and reactivity

Conditions to avoid: Do not allow the can to exceed 120 degrees Fahrenheit. Stable at normal temperatures.
Hazardous decomposition: No dangerous decomposition products known.

11 Toxicological information

Skin effects: No irritant effect.
Eye effects: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
108-88-3	Toluene	3

NTP (National Toxicology Program)
None of the ingredients is listed.

12 Ecological information

Aquatic toxicity: Hazardous for water, do not empty into drains.
Other information: This product does not contain any chlorofluorocarbons (CFC's), hydrochlorofluorocarbons (HCFC's), perfluorocarbons (PFC's), or chlorinated solvents.

13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.

14 Transport information

UN-Number UN1950
DOT Consumer Commodity ORM-D
AEROSOLS, flammable
Class 2.1
Marine pollutant: No
EMS Number: F-D,S-U
Packaging Group: --

15 Regulatory information

SARA Section 355 (extremely hazardous substances):
None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):	
108-88-3	Toluene

TSCA: All ingredients are listed.
CPSC: This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

(Contd. on page 4)

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Trade name: HI TECH TRUE RED

(Contd. of page 3)

California Proposition 65 chemicals known to cause cancer:	
108-10-1	methyl isobutyl ketone
100-41-4	ethyl benzene

California Proposition 65 chemicals know to cause developmental toxicity: 108-88-3 Toluene

WHMIS Symbols for Canada: A - Compressed gas
D2A - Very toxic material causing other toxic effects

EPA:		
67-64-1	Acetone	I
108-88-3	Toluene	II

ACGIH:		
67-64-1	Acetone	A4
108-88-3	Toluene	A4

NIOSH:
The following substances are regulated in the United States with reference to occupational exposure limits:

16 Other information

This product was manufactured in the U.S.A.
The information on this sheet is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Contact: Regulatory Affairs

Abbreviations and acronyms:
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
TSCA: Toxic Substances Control Act
CPSC: Consumer Product Safety Commission
EPA: Environmental Protection Agency
IARC: International Agency for the Research of Cancer
NIOSH: National Institute for Occupational Safety and Health

valspar

if it matters, we're on it.®

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**059.TY25630.076**
Product Name:	HITACHI TAXI CAB YELLOW AEROSOL 6UC
Product Use:	Paint product.
Print date:	10/Apr/2012
Revision Date:	28/Feb/2012

Company Identification
The Valspar Corporation
1000 Lake Road
Medina, OH 44256

Manufacturer's Phone:	1-330-725-4511
24-Hour Medical Emergency Phone:	1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Causes skin irritation.
- May cause defatting of the skin.
- Can be absorbed through skin.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia

Acute Other Health Effects:
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Kidney injury may occur.
- Causes headache, drowsiness or other effects to the central nervous system.
- Blood disorders
- Liver injury may occur.
- Cardiac arrhythmias

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
PROPANE 74-98-6	10 - 15	Propane
NAPHTHA 64742-88-7	5 - 10	SOLVENT NAPHTHA, PETROLEUM, MEDIUM ALIPH
BUTANE 106-97-8	5 - 10	Butane
BUTYL ACETATE 123-86-4	5 - 10	n-Butyl acetate
XYLENE 1330-20-7	1 - 5	Xylenes (o-, m-, p- isomers)
PROPRIETARY RESIN	1 - 5	PROPRIETARY RESIN
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	Petroleum naphtha, light aromatic
TITANIUM DIOXIDE 13463-67-7	.1 - 1	Titanium dioxide
ETHYLBENZENE 100-41-4	.1 - 1	Ethyl benzene

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
Contaminated rags, wipes, saw dust, etc., may catch fire spontaneously. Store waste under water in closed metal containers or in approved self-closing containers designed to prevent spontaneous combustion until disposed of in compliance with applicable regulations. Oxidizing Material

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Wear safety glasses or goggles to protect against exposure.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	10 - 15	1000 ppm TWA 1800 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA 710 mg/m^3 TWA		
XYLENE 1330-20-7	1 - 5	100 ppm TWA 435 mg/m^3 TWA		
TITANIUM DIOXIDE 13463-67-7	.1 - 1	15 mg/m^3 TWA dust total		
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA 435 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	10 - 15	1000 ppm TWA			
BUTANE 106-97-8	5 - 10	1000 ppm TWA			
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA	200 ppm STEL		
XYLENE 1330-20-7	1 - 5	100 ppm TWA	150 ppm STEL		
TITANIUM DIOXIDE 13463-67-7	.1 - 1	10 mg/m^3 TWA			
ETHYLBENZENE 100-41-4	.1 - 1	100 ppm TWA	125 ppm STEL		

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.5
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.6
Specific Gravity:	.79
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-76
Flash point (Celsius):	-60
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide. Nitrogen compounds.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s

11. TOXICOLOGICAL INFORMATION

DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	10 - 15	= 658 mg/L Inhalation LC50 Rat 4 h
NAPHTHA 64742-88-7	5 - 10	= 3000 mg/kg Dermal LD50 Rabbit > 5.28 mg/L Inhalation LC50 Rat 4 h > 5000 mg/kg Oral LD50 Rat
BUTANE 106-97-8	5 - 10	= 658 mg/L Inhalation LC50 Rat 4 h
BUTYL ACETATE 123-86-4	5 - 10	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
XYLENE 1330-20-7	1 - 5	= 4300 mg/kg Oral LD50 Rat = 47635 mg/L Inhalation LC50 Rat 4 h = 5000 ppm Inhalation LC50 Rat 4 h > 1700 mg/kg Dermal LD50 Rabbit
AROMATIC NAPHTHA, LIGHT 64742-95-6	1 - 5	= 3400 ppm Inhalation LC50 Rat 4 h = 8400 mg/kg Oral LD50 Rat > 2000 mg/kg Dermal LD50 Rabbit > 5.2 mg/L Inhalation LC50 Rat 4 h
TITANIUM DIOXIDE 13463-67-7	.1 - 1	> 10000 mg/kg Oral LD50 Rat
ETHYLBENZENE 100-41-4	.1 - 1	= 15354 mg/kg Dermal LD50 Rabbit = 17.2 mg/L Inhalation LC50 Rat 4 h = 3500 mg/kg Oral LD50 Rat

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

Contains ethylbenzene, which has been determined by NTP to be an animal carcinogen with no known relevance to humans. IARC has classified ethylbenzene as possibly carcinogenic to humans (2b) on the basis of sufficient evidence of carcinogenicity in laboratory animals but inadequate evidence of cancer in humans. Contains TIO2 which is listed by IARC as a possible human carcinogen (Group 2B) based on animal data. Neither long term animal studies, nor human epidemiology studies of workers exposed to TIO2 provide an adequate basis to conclude TIO2 is carcinogenic. TIO2 is not classified as a carcinogen by NTP, U.S. OSHA, or the U.S. EPA.

Ingredient Name CAS-No.	Approx. Weight %	California Prop 65 - Reproductive (Female)	California Prop 65 - Carcinogen
ETHYLBENZENE 100-41-4	.1 - 1		Listed. initial date 6/11/04 - carcinogen

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
TITANIUM DIOXIDE 13463-67-7	.1 - 1			Monograph 47 [1989]
ETHYLBENZENE 100-41-4	.1 - 1			Monograph 77 [2000]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
NAPHTHA 64742-88-7	5 - 10			male rat-some evidence; female rat-no evidence; male mice-no evidence; female mice-equivocal evidence

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
XYLENE 1330-20-7	1 - 5			male rat-no evidence; female rat-no evidence; male mice-no evidence; female mice-no evidence
TITANIUM DIOXIDE 13463-67-7	.1 - 1			male rat-negative; female rat-negative; male mice-negative; female mice-negative
ETHYLBENZENE 100-41-4	.1 - 1			male rat-clear evidence; female rat-some evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
TITANIUM DIOXIDE 13463-67-7	.1 - 1	Present		
ETHYLBENZENE 100-41-4	.1 - 1	Present		A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D [Paint]

U.S Hazmat and/or International DG shipment exceptions
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2.1

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1	30 - 35			5000
BUTYL ACETATE 123-86-4	5 - 10			5000
XYLENE 1330-20-7	1 - 5		form R reporting required for 1.0% de minimis concentration	100
ETHYLBENZENE 100-41-4	.1 - 1		form R reporting required for 1.0% de minimis concentration	1000

SARA 311/312 Hazard Class:

Acute:	yes
Chronic:	yes
Flammability:	yes
Reactivity:	no
Sudden Pressure:	yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

BUTANE	106-97-8
BUTYL ACETATE	123-86-4
XYLENE	1330-20-7
PROPRIETARY RESIN	Trade Secret
NAPHTHA	64742-88-7
AROMATIC NAPHTHA, LIGHT	64742-95-6
DIMETHYL KETONE- EXEMPT SOLVENT	67-64-1
PROPANE	74-98-6

Additional Non-Hazardous Materials

PROPRIETARY RESIN	Trade Secret
PROPRIETARY RESIN	Trade Secret

California Proposition 65:
WARNING! This product contains a chemical known in the State of California to cause cancer.

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:
OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:
The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	10/Apr/2012
Revision Date:	28/Feb/2012

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number	090
Product name	Industrial RD-90
Effective date	14-Nov-2007
Company information	Sprayway, Inc. 484 Vista Ave. Addison, IL 60101 United States
Company phone	General Assistance 1-630-628-3000
Emergency telephone US	800-424-9300
Emergency telephone outside US	703-527-3887
Version #	4.0
Supersedes date	07-Aug-2007

2. Hazards Identification

Emergency overview

FLAMMABLE
CONTENTS UNDER PRESSURE.
Aerosol. Pressurized container may explode when exposed to heat or flame.

Harmful in contact with eyes. May be harmful if absorbed through skin. Prolonged exposure may cause chronic effects.

OSHA regulatory status

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).

Potential health effects

Routes of exposure	Skin contact. Inhalation. Eye contact.
Eyes	Contact may irritate or burn eyes. Eye contact may result in corneal injury.
Skin	Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).
Inhalation	Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Prolonged inhalation may be harmful.
Ingestion	Exposure by ingestion of an aerosol is unlikely. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause delayed lung damage.

Target organs

Kidney.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged and may cause blood damage. These effects have not been observed in humans.

Blood. Central nervous system. Liver. Respiratory system.

Chronic effects

Unconsciousness. Conjunctiva. Liver injury may occur. Kidney injury may occur. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. May cause delayed lung damage.

Signs and symptoms

Discomfort in the chest. Corneal damage. Narcosis. Cyanosis. Liver enlargement. Jaundice. Conjunctivitis. Defatting of the skin. Irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Mineral Spirits	64742-48-9	20 - 30
Propane	74-98-6	8 - 10
2-Butoxyethanol	111-76-2	8 - 10
Non-hazardous and other components below reportable levels		40 - 60

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention immediately.
Skin contact	Immediately flush skin with plenty of water. Remove and isolate contaminated clothing and shoes. Get medical attention immediately. Wash clothing separately before reuse.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Ingestion	Do not induce vomiting without medical advice. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Notes to physician	Symptoms may be delayed.
General advice	Immediate medical attention is required.

5. Fire Fighting Measures

Flammable properties	Containers may explode when heated. Vapor or gas may spread to distant ignition sources and flash back.
Extinguishing media	
Suitable extinguishing media	Water. Water spray. Water fog. Alcohol foam. Dry chemical. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Protection of firefighters	
Protective equipment and precautions for firefighters	In the event of fire and/or explosion do not breathe fumes. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Containers should be cooled with water to prevent vapor pressure build up. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Cool containers with flooding quantities of water until well after fire is out.

6. Accidental Release Measures

Personal precautions	Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Keep unnecessary personnel away.
Methods for containment	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift.
Methods for cleaning up	Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean contaminated surface thoroughly. After removal flush contaminated area thoroughly with water.

7. Handling and Storage

Handling	Pressurized container: Do not pierce or burn, even after use. Do not handle or store near an open flame, heat or other sources of ignition. Do not use if spray button is missing or defective. Use only with adequate ventilation. Do not get this material in contact with eyes. Do not get this material in contact with skin. Avoid prolonged exposure.
Storage	Level 3 Aerosol. Contents under pressure. Do not puncture, incinerate or crush. The pressure in sealed containers can increase under the influence of heat. Avoid exposure to long periods of sunlight. Keep in an area equipped with sprinklers. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Exposure limits

ACGIH

Components	CAS #	TWA	STEL	Ceiling
Mineral Spirits	64742-48-9	100 ppm	Not established	Not established
Propane	74-98-6	1000 ppm	Not established	Not established
2-Butoxyethanol	111-76-2	20 ppm	Not established	Not established

OSHA Components	CAS #	TWA	STEL	Ceiling
Mineral Spirits	64742-48-9	500 ppm	Not established	Not established
Propane	74-98-6	1000 ppm	Not established	Not established
2-Butoxyethanol	111-76-2	50 ppm	Not established	Not established

Engineering controls Provide adequate ventilation.

Personal protective equipment

Eye / face protection Wear chemical goggles.

Skin protection Wear appropriate chemical resistant gloves. Wear chemical protective equipment that is specifically recommended by the manufacturer.

Respiratory protection Wear positive pressure self-contained breathing apparatus (SCBA).

General hygeine considerations When using do not smoke. Avoid contact with eyes. Avoid contact with skin. Avoid contact with clothing. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance Compressed liquefied gas.

Color Dark brown.

Odor odourless

Physical state Liquid.

Form Aerosol.

Flammability (HOC) 41.04 kJ/g estimated

Flash back No

Pressure 27 - 37 psig @70F

Solubility Negligible

Flash point -156 °F (-104.4 °C) estimated

Boiling point 222.8 °F (106.1 °C) estimated

Specific gravity 0.777 estimated

pH Not applicable

10. Chemical Stability & Reactivity Information

Chemical stability Risk of ignition. Stable at normal conditions.

Conditions to avoid Heat, flames and sparks.

Hazardous decomposition products May include oxides of oxides of carbon.

11. Toxicological Information

Acute effects Acute LD50: 3160 mg/kg estimated, Rat, Oral
Acute LD50: 1495 mg/kg estimated, Rat, Dermal
Acute LC50: 7 mg/l/4h estimated, Rat, Inhalation

Sensitization Not expected to be hazardous by OSHA criteria.

Local effects Contact may irritate or burn eyes. Liver toxicity. Blood disorder may occur after ingestion. Components of the product may be absorbed into the body through the skin.

Chronic effects Hazardous by OSHA criteria. This product may be harmful if it is absorbed through the skin. Repeated absorption may cause disorder of central nervous system, liver, kidneys and blood. Prolonged or repeated exposure may cause lung injury. Prolonged exposure may cause chronic effects.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

Subchronic effects Kidney injury may occur. Blood disorder may occur after prolonged inhalation. Blood disorder may occur after prolonged skin contact.

Neurological effects Hazardous by OSHA criteria.

Mutagenicity Not expected to be hazardous by OSHA criteria.

Reproductive effects Not expected to be hazardous by OSHA criteria.

Teratogenicity Not expected to be hazardous by OSHA criteria.

Epidemiology Hazardous by OSHA criteria.

Further information	Symptoms may be delayed.

12. Ecological Information

Ecotoxicity	LC50 150 mg/L, Fish, 96.00 Hours, EC50 10464 mg/L, Daphnia, 48.00 Hours, Components of this product have been identified as having potential environmental concerns.

13. Disposal Considerations

Waste codes	D001: Waste Flammable material with a flash point <140 F
Disposal instructions	Contents under pressure. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose in accordance with all applicable regulations.

14. Transport Information

Department of Transportation (DOT) Requirements

Basic shipping requirements:	
Proper shipping name	Consumer commodity
Hazard class	ORM-D
Subsidiary hazard class	None
Additional information:	
Packaging exceptions	156, 306
Packaging non bulk	156, 306
Packaging bulk	None

IMDG

Basic shipping requirements:	
Proper shipping name	AEROSOLS, flammable
Hazard class	2.1
UN number	1950
Additional information:	
Packaging exceptions	LTD QTY
Item	5F
Labels required	2.1
Transport Category	2

IATA

Basic shipping requirements:	
Proper shipping name	Aerosols, flammable
Hazard class	2.1
UN number	1950
Additional information:	
Packaging exceptions	LTD QTY

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Occupational Safety and Health Administration (OSHA)

29 CFR 1910.1200 hazardous chemical	Yes

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	Yes

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of New and Existing Chemicals (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

U.S. - Pennsylvania - RTK (Right to Know) List

2-Butoxyethanol	111-76-2	Present
Propane	74-98-6	Present

16. Other Information

HMIS® ratings	Health: 1* Flammability: 4 Physical hazard: 0
Prepared by	Regulatory Compliance
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	14-Nov-2007

ANSUL

by Tyco Fire Suppression & Building Products

MATERIAL SAFETY DATA SHEET

INERGEN

Issue Date: 09-24-2010

1. Product and Company Identification

Material name	**INERGEN**
Version #	01
Revision date	09-24-2010
CAS #	Mixture
Product use	Fire extinghishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Suppression and Building Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Contents under pressure. Heat may cause the containers to explode.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation.
Eyes	None known.
Skin	None known.
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Ingestion	Not a likely route of entry.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Hazardous components	**CAS #**	**Percent**
CARBON DIOXIDE	124-38-9	10 - 20
Non-hazardous components	**CAS #**	**Percent**
NITROGEN	7727-37-9	40 - 60
ARGON	7440-37-1	40 - 60

4. First Aid Measures

First aid procedures	
Eye contact	Flush thoroughly with water for at least 15 minutes. Get medical assistance.
Skin contact	Rinse with water.
Inhalation	Remove to fresh air.
Ingestion	Not likely, due to the form of the product.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.

Extinguishing media

Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters

Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Specific methods	None known.

6. Accidental Release Measures

Personal precautions	None known.
Environmental precautions	No special environmental precautions required.
Methods for containment	Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Not applicable.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Handle and open container with care.
Storage	Contents under pressure. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value
CARBON DIOXIDE (124-38-9)	STEL	30000.0000 ppm
	TWA	5000.0000 ppm

U.S. - OSHA

Components	Type	Value
CARBON DIOXIDE (124-38-9)	PEL	5000.0000 ppm
		9000.0000 mg/m3
	STEL	54000.0000 mg/m3
		30000.0000 ppm
	TWA	10000.0000 ppm
		18000.0000 mg/m3

Personal protective equipment

Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance

Form	Compressed gas.
Color	Colorless.
Odor	None.
Physical state	Gas.
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	-544 °F (-320 °C)

Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	2950 psi @ 70F (at 200 bar)
Vapor density	1.1 (air=1)
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Excessive heat.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological Information

Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1956
Proper shipping name	Compressed gas, n.o.s. (mixture of nitrogen, argon and carbon dioxide)
Hazard class	2.2
Packaging exceptions	306, 307
Packaging non bulk	302, 305
Packaging bulk	314, 315
ERG number	126

DOT

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Acute Health - No
Chronic Health - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance

No

Section 311 hazardous chemical

No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

ARGON (CAS 7440-37-1)	Listed.
CARBON DIOXIDE (CAS 124-38-9)	Listed.
NITROGEN (CAS 7727-37-9)	Listed.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 0
Flammability: 0
Physical hazard: 0

NFPA ratings	Health: 0 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	09-24-2010

801

MATERIAL SAFETY DATA SHEET

Complies with OSHA Hazard Communication Standard 29 CFR 1910.1200

Date of Prep: 04/18/13

SECTION 1

SUNNYSIDE CORPORATION
225 CARPENTER AVENUE
WHEELING, ILLINOIS 60090 (847) 541-5700
EMERGENCY TELEPHONE (800) 424-9300

FOR INFORMATION: (847) 541-5700

- SUNNYSIDE CORPORATION
- CHEM TREC

Product Class: Petroleum Hydrocarbon
Trade Name: KEROSENE

Manufacturer's Code: 801
NPCA HMIS:
Health: 1
Fire: 2
Reactivity: 0

Product Appearance and Odor: Clear, water-white liquid; mild characteristic odor.

SECTION 2 -- HAZARDOUS INGREDIENTS

OCCUPATIONAL EXPOSURE LIMITS

INGREDIENT	CAS #	PERCENT	ACGIH TLV (TWA)	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)	VAPOR PRESSURE
Petroleum Distillate	8008-20-6		Not Est.	(For Petroleum Distillates - Naphtha)	400 PPM		0.5 MM Hg @ 100^{O} F
Naphthalene	91-20-3		10 PPM	15 PPM	10 PPM	15 PPM	Not Known

SECTION 3 -- EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Flush eyes with plenty of water for 15 minutes while holding eyelids open. Get medical attention.

Skin Contact: Remove contaminated clothing/shoes. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing.

Ingestion: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

SECTION 4 -- PHYSICAL DATA

The following data represent approximate or typical values. They do not constitute product specifications.

Boiling Range: 350-572^{O} (F)
Vapor Density: Heavier than air
Evaporation Rate: Slower than ether
% Volatile By Volume: 100%
Weight Per Gallon: 6.75 lbs.
Solubility in Water: Negligible

SECTION 5 -- FIRE AND EXPLOSION DATA

Flammability Classification: Combustible Liquid-Class II

Flash Point: 111^{O} (F) Minimum (Tag. Closed Cup)

Autoignition Temperature: 450^{O}(F)

Lower Explosive Limit: NA

Extinguishing Media: Carbon Dioxide, foam, dry chemical, water spray. Do not use direct water stream; it will spread fire.

Unusual Fire and Explosion Hazards: Do not store or mix with strong oxidants.

Special Fire Fighting Procedures: Use air-supplied rescue equipment for enclosed areas. Cool exposed containers with water.

SECTION 6 -- HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE:	See Section 2.
EFFECTS OF OVEREXPOSURE	
Acute	
Eye Contact:	Contact may cause mild eye irritation, including stinging, watering and redness.
Skin Contact:	Skin irritant. Contact may cause redness and burning. Prolonged or repeated contact may cause drying and cracking of the skin and severe skin damage. No harmful effects to humans from skin absorption have been reported. Prolonged and repeated dermal exposures of rabbits to kerosene produced multi-focal necrosis of the liver.
Inhalation:	Vapors may cause irritation to nose, throat and respiratory tract. Petroleum hydrocarbons of similar composition have been shown to cause kidney damage and tumors in male rats following prolonged inhalation exposures. This effect appears to be unique to the male rat.
Ingestion:	Ingestion may result in vomiting, aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspiration pneumonitis.
Chronic:	Repeated skin contact may aggravate an existing dermatitis (skin condition).
Target Organs:	Potential hazard to kidney and liver.
Carcinogenicity:	Application to mouse skin twice a week for 12 months, resulted in an increased incidence of skin tumors. Kerosene has not been identified as a carcinogen by NTP, IARC or OSHA. Female mice exposed via inhalation to Naphthalene developed alveolar adenomas. This effect was not seen in male mice. Naphthalene has not been identified as a carcinogen by NTP, IARC or OSHA.
Medical Conditions Aggravated by Exposure:	Conditions aggravated by exposure may include skin disorders, respiratory (asthma-like) disorders and liver disorders.

SECTION 7 -- REACTIVITY DATA

Stability:	Stable
Conditions to Avoid:	Heat, sparks and flame.
Incompatibility (Materials to Avoid):	Strong oxidizing agents like liquid chlorine, concentrated oxygen, strong acids, selected amines and bases.
Hazardous Decomposition Products:	Thermal decomposition may yield carbon dioxide and carbon monoxide.
Hazardous Polymerization:	Will not occur.

SECTION 8 -- SPILL OR LEAK PROCEDURES

Steps to be taken in case material is spilled or released: Remove ignition sources, evacuate area, avoid breathing vapor or contact with liquid. Recover free liquid or stop leak if possible. Dike large spills and use absorbent material for small spills. Keep spilled material out of sewers, ditches and bodies of water.

Waste disposal method: Incinerate under safe conditions; dispose of in accordance with local, state and federal regulations.

SECTION 9 -- SAFE HANDLING AND USE INFORMATION

Respiratory Protection:	Appropriate vapor canister, self-contained breathing apparatus or supplied-air hose mask, if needed.
Ventilation:	Sufficient, in volume and pattern, to keep workroom concentration below current applicable OSHA safety and health requirements. See Section 2. Use explosion-proof equipment. No smoking.
Protective Gloves:	Rubber or neoprene.
Eye Protection:	Chemical safety goggles.
Other Protective Equipment:	Impervious clothing or boots, if needed.

SECTION 10 -- SPECIAL PRECAUTIONS

Dept. of Labor Storage Category:	Combustible Liquid - Class II
Hygienic Practices:	Keep away from heat, sparks and open flame. Keep containers closed when not in use. Avoid eye contact. Avoid prolonged or repeated contact with skin. Wash skin with soap and water after contact.
Additional Precautions:	Ground containers when transferring liquid to prevent static accumulation and discharge. Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lighting, and Stray Currents" (American Petroleum Institute, 1720 L Street Northwest, Washington,DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).
Empty Container Warning:	"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks or other sources of ignition; they may explode and cause injury or death. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to supplier or disposed of in an environmentally safe manner and in accordance with governmental regulations.

SECTION 11 -- ADDITIONAL INFORMATION

This product contains the following toxic chemical(s) which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

TOXIC CHEMICAL	CAS #	APPROXIMATE % BY WEIGHT
Naphthalene	91-20-3	< 1.0%

SARA Title III Hazard Categories:	Immediate (Acute) Health, Delayed (Chronic) Health
Common Names:	Solvent Naphtha (Petroleum), Aliphatic Hydrocarbon, Petroleum Distillate
California Proposition 65:	This product may contain trace amounts of Benzene, Ethyl Benzene and Toluene- which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65.

TRANSPORTATION

U.S. D.O.T. Proper Shipping Name:	Kerosene
U.S. D.O.T. Hazard Class & Packing Group:	Combustible Liquid, III
U.S. D.O.T. I.D. Number:	UN 1223

Refer to 49 CFR for possible exceptions and exemptions.

MATERIAL SAFETY DATA SHEET

Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Kidde 90 Multi-Purpose ABC Dry Chemical (Fire Extinguishing Agent)
Other Trade Names	ABC, Ammonium Phosphate, Monoammonium Phosphate, Tri-Class
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Kidde – Residential and Commercial
Address	1016 Corporate Park Drive Mebane, NC 27302 USA
Phone Number	(919) 563-5911 (919) 304-8200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 09, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
See Section 11 - Toxicity

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Monoammonium Phosphate	7722-76-1 EC#2317645	85 - 97%	None	None
Ammonium Sulfate	7783-20-2 EC#2319841	1-6%	None	None
Mica	12001-26-2	1 - 4%	None	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Clay	8031-18-3	<2%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<0.1%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Powder
Color	Pale Yellow
Odor	Odorless
Specific Gravity	Not available
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
- Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid
- Strong oxidizing agents - strong acids - sodium hypochlorite

Hazardous Polymerization
Will not occur.

10. STABILITY AND REACTIVITY

Hazardous Decomposition Products
- oxides of carbon - ammonia – oxides of phosphorus – nitrogen oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Mica and clay may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

NOTE: For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at www.badgerfire.com.

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 1- 6%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Ammonium Sulfate (7783-20-2) 1- 6%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304

This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization

- Immediate (Acute) Health Hazard

15. REGULATORY INFORMATION

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Kidde – Residential and Commercial assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	KP WET CHEMICAL AGENT (CH 544,CH547, CH656,CH664)
Manufacturer:	AMEREX CORPORATION
Internet Address:	www.amerex-fire.com
Address:	7595 Gadsden Highway P.O. Box 81 Trussville, AL 35173-0081
Telephone:	(205) 655-3271
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised:	May, 2012

Section 2. Hazard Identification and Emergency Overview

Emergency overview: Reddish colored liquid.

Adverse health effects and symptoms: Mildly irritating to the eyes, skin, and respiratory system. Symptoms may include coughing, shortness of breath, and eye and skin irritation. Ingestion, although unlikely, may cause gastrointestinal disturbance.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Water	NR**	NR	NR
Potassium acetate	NR	NR	NR
Potassium citrate	NR	NR	NR
Proprietary organic phosphate esters	NR	NR	NR
Pink pigment	NR	NR	NR

*German regulatory limits ** NR = Not Regulated

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system)

D2B – Product may irritate skin or mucous membranes

Section 3. Composition/ information on ingredients

Name/Compound	Weight %	CAS #
Water	< 50	7732-18-5
Potassium acetate	< 50	127-08-2
Potassium citrate	< 5	866-84-2
Organic phosphate esters	< 5	68130-47-2
Pink pigment, mono azo dyes	<1	3520-42-1 4478-76-6 6844-74-2

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes at eye wash station for 15 minutes and repeat until pain free. Seek medical attention if irritation develops or persists, or if vision changes occur.

Skin Exposure: In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops or persists.

Inhalation: If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink and on the advice of medical personnel induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

Medical conditions possibly aggravated by exposure: Skin contact may aggravate existing skin disease. Chronic overexposure may affect blood cholinesterase levels and the central nervous system.

Section 5. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent

Unusual fire/explosion hazards: in a fire this material may decompose, releasing oxides of phosphorus, carbon, and acetic acid (see Section 10).

Insensitive to mechanical impact or static discharge.

HMIS hazard ranking: health 1, flammability 0, reactivity 0, personal protective equipment: eye protection, gloves and appropriate skin protection (see Section 8)

Section 6. Accidental release measures

Large spills (one drum or more) should be addressed by hazardous materials technicians following a site-specific emergency response plan and trained in the appropriate use of PPE. Clean up released material using sorbent socks for containment, followed by sorbent material inside containment. If deemed necessary, wear full face APR or PAPR with organic vapor cartridges (Section 8). Bag and drum for disposal. If product is used and/or contaminated, for example if mixed with kitchen grease, use PPE and containment appropriate to the nature of the mixture. Handle and dispose of as a hazardous waste unless testing indicates otherwise. Decontaminate with detergent and water.

Section 7. Handling and storage

Avoid skin, eye, or respiratory exposure. Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8). Keep product in original container or extinguisher. Contents may be under pressure – inspect for extinguisher rust periodically to insure container integrity. Do not mix with other extinguishing agents.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use air-purifying respirator (APR) or powered air-purifying respirator (PAPR) with organic vapor cartridges/canisters for short term exposure, and supplied air/SCBA for high concentration or prolonged exposure.

Eye protection: wear chemical goggles.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. Physical and chemical properties

Appearance: reddish colored liquid
Specific gravity: ~ 1.3
Solubility: soluble in water
Non –flammable
Flash point: none
Vapor pressure: < 10 mm Hg at room temperature
pH: approximately 8.5

Boiling point: ~ 300 $^{\circ}$ F

No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong acids, strong oxidizers such as sodium hypochlorite (bleach), aluminum, polyurethane, and any wet, reactive material.

Decomposition products: heat of fire may release carbon dioxide, phosphorus oxide, and acetic acid.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Potassium acetate LD_{50} oral rat: 3250 mg/kg body weight

Target organs in man: respiratory system, eyes, skin. This product is a mild irritant to epithelial tissue, and may aggravate dermatitis. Ingestion may cause gastrointestinal injury. No information was found indicating the product causes sensitization.

Chronic toxicity: This product's ingredients are not considered as "probable" or "suspected" carcinogens by OSHA, IARC, or ACGIH.

Reproductive toxicity: This product's ingredients are not known to have reproductive or teratogenic effects.

Section 12. Ecological information

Ecotoxicity: weak environmental toxin, specific negative effects unknown.

Persistence/
Degradability: moderate biodegradation in soil, rapid photolytic degradation in air

Bioaccummulation: extent unknown

Mobility in soil: water soluble, slow to evaporate, may reach groundwater

Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

Section 14. Transportation information

This product is not a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, and is not regulated by the DOT.

When shipped in a stored pressure type fire extinguisher, and pressurized with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/division is 2.2 Non-Flammable Gas. Packing Group – N/A

Section 15. Regulatory information

International Inventory Status
Some ingredients are on the following inventories

Country (ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ ELINCS	Yes
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	KECL	Yes

European Risk and Safety phrases:

EU Classification:	Xi.	Irritant
R Phrases:	36	Irritating to eye
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
	36	Wear suitable protective clothing.

U.S. federal regulatory information:

None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs).

State regulatory information:

Chemicals in this product are not covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: None
Texas – Hazardous Substance List: No
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65: No component is listed on the California Proposition 65 lists.

Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Lindsay R. Hill, CIH.

Material Safety Data Sheet

Revision Number: 001.2 **Issue date:** 01/17/2012

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite® Threadlocker Red 271 Heavy Duty**
Product type: Thread sealing
IDH number: 209741
Item number: 27100
Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: 800.624.7767
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:

Physical state: Liquid
Color: Red
Odor: Mild

HEALTH: *2
FLAMMABILITY: 1
PHYSICAL HAZARD: 1
Personal Protection: Not available.

WARNING: CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.
Skin contact: May cause allergic skin reaction. May cause skin irritation.
Eye contact: Contact with eyes will cause irritation.
Ingestion: Not expected to be harmful by ingestion.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS NUMBER	%
Polyglycol dimethacrylate	25852-47-5	60 - 100
Bisphenol A fumarate resin	39382-25-7	10 - 30
Saccharin	81-07-2	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms develop and persist, get medical attention.

Skin contact:	Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.
Eye contact:	Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.
Ingestion:	Do not induce vomiting. Keep individual calm. Never give anything by mouth to an unconscious person. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point:	> 93.3 °C (> 199.94 °F) Tagliabue closed cup
Autoignition temperature:	Not available.
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Extinguishing media:	Foam, dry chemical or carbon dioxide.
Special firefighting procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.
Unusual fire or explosion hazards:	None
Hazardous combustion products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions:	Remove all sources of ignition. Do not allow product to enter sewer or waterways.
Clean-up methods:	Store in a partly filled, closed container until disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Ensure adequate ventilation.

7. HANDLING AND STORAGE

Handling:	Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Use only with adequate ventilation. Keep container closed.
Storage:	For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Polyglycol dimethacrylate	None	None	None	None
Bisphenol A fumarate resin	None	None	None	None
Saccharin	None	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None

Engineering controls: Local exhaust ventilation is recommended when general ventilation is not sufficient to control airborne contamination below occupational exposure limits.

Respiratory protection: Use a NIOSH approved air-purifying respirator with an organic vapor cartridge.

Eye/face protection: Safety goggles or safety glasses with side shields.

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Red
Odor: Mild
Odor threshold: Not available.
pH: Not applicable
Vapor pressure: < 5 mm hg (26.7 °C (80.1 °F))
Boiling point/range: > 148.9 °C (> 300°F)
Melting point/ range: Not available.
Specific gravity: 1.07 at 26.70 °C (80.06 °F)
Specific gravity: 1.1
Vapor density: Not available.
Flash point: > 93.3 °C (> 199.94 °F) Tagliabue closed cup
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.
Autoignition temperature: Not available.
Evaporation rate: Not available.
Solubility in water: Slight
Partition coefficient (n-octanol/water): Not available.
VOC content: 0.82 %; 7.81 g/l

10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.

Hazardous decomposition products: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours. Phenolics.

Incompatible materials: Rust. Strong oxidizing agents. Reducing agents. Strong acids. Copper.

Conditions to avoid: Keep away from heat, ignition sources and incompatible materials. See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

11. TOXICOLOGICAL INFORMATION

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Bisphenol A fumarate resin	No	No	No
Saccharin	No	No	No
Cumene hydroperoxide	No	No	No

Hazardous components	Health Effects/Target Organs
Polyglycol dimethacrylate	Irritant, Allergen
Bisphenol A fumarate resin	No Target Organs
Saccharin	No Target Organs
Cumene hydroperoxide	Allergen, Central nervous system, Corrosive, Irritant, Mutagen

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: It is the responsibility of the user to determine if an item is hazardous as defined in the Resource Conservation and Recovery Act (RCRA) at the time of disposal. Product uses, transformations, mixtures, processes, etc., may render the resulting material hazardous, under the criteria of ignitability, corrosivity, reactivity and toxicity characteristics of the Toxicity Characteristics Leaching Procedure (TCLP) 40 CFR 261.20-24.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

TSCA 12(b) Export Notification: None above reporting de minimus

CERCLA/SARA Section 302 EHS:

CERCLA/SARA Section 311/312: Immediate Health, Delayed Health

CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Saccharin (CAS# 81-07-2). Cumene hydroperoxide (CAS# 80-15-9).

California Proposition 65: This product contains a chemical known in the State of California to cause cancer.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

WHMIS hazard class: D.2.B

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: New Material Safety Data Sheet format.

Prepared by: Karim Nasr, Regulatory Affairs Specialist

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Fire Protection Products, Inc.
3198 Lionshead Avenue
Carlsbad, CA 92010
Phone: (760) 599-1168
Fax: (800) 344-3775

MATERIAL SAFETY DATA SHEET

Last Updated: 03/12/2012

Section 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

LubeFit© Pipe Joint Lubricant

Manufacturer Information	Emergency Contact
Fire Protection Products, Inc. 3198 Lionshead Avenue Carlsbad, CA 92010 Phone: (760) 599-1168 Fax: 1-800-344-3775	CHEMTREC 1300 Wilson Boulevard Arlington, VA 22209-2380 Phone: (800)424-9300 International: +1 (703) 527-3887

Product Type	Joint Lubricant
Preparation/Revision Date	11/21/2012

Section 2 COMPOSITION/INFORMATION ON INGREDIENTS

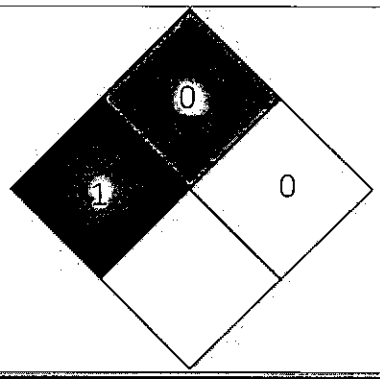
Component Name	CAS Number	OSHA PEL	ACGIH TLV	% (Optional)
Proprietary blend of non-hazardous materials				

Section 3 HAZARDS IDENTIFICATION

Principal Hazard(s)	Not Hazardous IARC, NTP, and OSHA do not list the ingredients in LubeFit© Pipe Joint Lubricant as carcinogens.

Section 4 FIRST AID MEASURES

Oral	NA
Eye	Flush with copious volumes of water for 15 minutes while holding eyelids open. If irritation persists, call a physician.
Skin	Wash with water. If irritation persists, call a physician.
Inhalation	NA

Section 5	FIRE FIGHTING MEASURES
Flash Point	>220° F (<104° C)
Upper Flammable Limit	NA
Lower Flammable Limit	NA
Extinguishing Media	Water, water fog, alcohol foam, carbon dioxide or dry chemical.
Special Firefighting Procedures	Do not release runoff from fire control methods to sewers or waterways Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.
Unusual Fire and Explosion Hazards	None
Auto Ignition Temperature	NA
NFPA	Health: 1 Flammability: 0 Instability: 0 

Section 6	ACCIDENTAL RELEASE MEASURES
Personal Precautions	NA
Environmental Precautions	This product is a biodegradable soap.
Methods for Containment	For large spills, dike far ahead of spill for later disposal.
Methods for Clean Up	Place the bulk of any Spilled material into drums, then rinse any remaining material to sewage treatment facility, in accordance with any applicable regulations.

Section 7	HANDLING AND STORAGE
Handling	No special precautions required.
Storage	No special precautions required.

Section 8	EXPOSURE CONTROLS/ PERSONAL PROTECTION
Engineering Controls	NA
Personal Protection	Eye/Face Protection: Wear protective eyeglasses or chemical safety goggles. Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.
	Skin Protection: Wear chemically protective gloves to prevent prolonged or repeated skin contact.
	Respiratory Protection: If respirators are used, OSHA requires a written respiratory program that includes at least medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
General Measures	Ventilation: Provide general or local exhaust ventilation systems. Contaminated Equipment: Launder before reuse. Remove this material from your shoes and clean personal protective equipment. Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9	PHYSICAL AND CHEMICAL PROPERTIES
Physical State: Paste	**Vapor Density (Air =10):** NA
Appearance, Color, Odor: off-white paste, bland odor	**Evaporation Weight:** NA
Specific Gravity: 1.2	**Freezing/Melting Point:** <32˚ F
Viscosity: Viscous paste	**Boiling Point:** >220˚F
Odor Threshold: NA	**% Volatile:** <33
Water Solubility: Completely water dispersible	**pH:** 9.0
Vapor Pressure: NA	**Density:** ~ 10.0 lbs./gal.

Section 10	STABILITY AND REACTIVITY
Stability	LubeFit© Pipe Joint Lubricant is stable at room temperature in closed containers under normal storage and handling conditions
Incompatibility	NA
Conditions to Avoid	Avoid contact with strong oxidizing agents
Polymerization	Hazardous polymerization will not occur
Hazardous Decomposition	Thermal oxidative decomposition of LubeFit© Pipe Joint Lubricant can produce oxides of carbon and nitrogen

Section 11	TOXICOLOGICAL INFORMATION
Oral Toxicity	NA
Dermal Toxicity	Slight skin irritant if allowed to remain in contact.
Inhalation Toxicity	NA
Chronic Toxicity	NA
Respiratory Irritation	NA
Carcinogenicity	NA
Other	Eye effects: Eye irritant (based on blended ingredients).
Section 12	**ECOLOGICAL INFORMATION**
Ecotoxicity	NA
Degradability	Soaps are well known to be biodegradable
Mobility	Unknown
Section 13	**DISPOSAL CONSIDERATIONS**
Waste Disposal Method	Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations

Section 14	TRANSPORT INFORMATION
US DOT Shipping Name	Not hazardous under DOT regulations.
Hazard Class	NA
DOT Identification Number	NA
DOT Shipping Label	NA
Canadian Transportation of Dangerous Goods:	NA
Marine Pollutants	NA

Section 15	REGULATORY INFORMATION
USA	
TSCA Inventory	All ingredients appear on inventory
SARA Title III	Sec. 302/304: NA
	Sec. 311/312: NA
	Sec. 313: NA
	CERCLA RQ: not subject to the reporting requirements of CERCLA
California Prop 65	NA
Canada	
WHMIS Classification (for workplace exposures)	NA
New Substance Notification Regulations	NA
NPRI Substances	NA

Section 16	OTHER INFORMATION
Additional Information	
Prepared By	D. Barrer
Revised Date	NOVEMBER 2012
Disclaimer	Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof, **Fire Protection Products, Inc.** makes no representations as to the completeness or accuracy thereof. **Fire Protection Products, Inc.** makes no warranty whatsoever, expressed or implied, of merchantability or fitness for the particular purpose since the conditions of use are beyond our control. **Fire Protection Products, Inc.** assumes no responsibility for injury to recipient or to third persons for any damage to any property and recipient.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)
Health = 1 Fire = 0 Reactivity = 0 PP = NA
Rating: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Extreme

ANSUL

MATERIAL SAFETY DATA SHEET

LVS Wet Chemical Agent

Product Code: 1030-2-007 ANa | Issue Date: 01-08-2014

1. Product and Company Identification

Material name	LVS Wet Chemical Agent
Version #	02
Revision date	01-08-2014
CAS #	Mixture
Product Code	1030-2-007 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING! Causes skin and eye irritation. Keep out of reach of children. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Skin contact. Eye contact. Inhalation.
Eyes	Do not get this material in contact with eyes.
Skin	Avoid contact with the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Vapors may irritate mucous membranes. Do not breathe vapor.
Ingestion	Not a likely route of entry. Do not ingest.
Target organs	Eyes. RESPIRATORY SYSTEM. Skin. Central nervous system.
Chronic effects	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Irritation of nose and throat. Irritation of eyes and mucous membranes. Defatting of the skin. Rash. Skin irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Butyl Carbitol	112-34-5	1 - 2.5
ETHYLENE GLYCOL	107-21-1	10 - 20
Other components below reportable levels		80 - 90

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from *poison control center. If vomiting* occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.

General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Hazardous combustion products	May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.
Storage	Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	Form
ETHYLENE GLYCOL (107-21-1)	TWA	100.0000 mg/m3	Aerosol.

U.S. - OSHA

Components	Type	Value
ETHYLENE GLYCOL (107-21-1)	Ceiling	50.0000 ppm 125.0000 mg/m3

Personal protective equipment

Eye / face protection	Do not get in eyes. Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.
Skin protection	Wear appropriate chemical resistant clothing. Chemical resistant gloves.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	When using do not smoke. Avoid contact with skin. Keep away from food and drink. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Clear. Colorless.
Odor	Slight. Vinegar-like.
Physical state	Liquid.
pH	10 - 12
Melting point	Not available.
Freezing point	Not available.
Boiling point	244.4 °F (118 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, *% by volume*	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.2
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Strong oxidizing agents. Oxidizing agents. Peroxides. Acids.
Hazardous decomposition products	Nitrogen oxides (NOx). Sulfur oxides. Carbon oxides.

11. Toxicological Information

Toxicological data

Components	Test Results
ETHYLENE GLYCOL (107-21-1)	Acute Dermal LD50 Rabbit: 9530 mg/kg
	Acute Oral LD50 Dog: > 8810 mg/kg
	Acute Oral LD50 Guinea pig: 8200 mg/kg
	Acute Oral LD50 Mouse: 14600 mg/kg
	Acute Oral LD50 Rat: 6140 mg/kg
	Acute Other LD50 Mouse: 5.8 g/kg
	Acute Other LD50 Rat: 2800 mg/kg
Butyl Carbitol (112-34-5)	Acute Dermal LD50 Rabbit: 2700 mg/kg
	Acute Oral LD50 Guinea pig: 2000 mg/kg
	Acute Oral LD50 Rabbit: 2200 mg/kg
	Acute Oral LD50 Rat: 6560 mg/kg
	Acute Other LD50 Mouse: 850 mg/kg
	Acute Other LD50 Rat: 500 mg/kg

Local effects	Components of the product may be absorbed into the body through the skin. Contact may irritate or burn eyes.
Chronic effects	Hazardous by OSHA criteria.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

ETHYLENE GLYCOL (CAS 107-21-1)	A4 Not classifiable as a human carcinogen.

Further information	Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Components	Test Results
ETHYLENE GLYCOL (107-21-1)	LC50 Fathead minnow (Pimephales promelas): 8050 mg/l 96.00 hours
Butyl Carbitol (112-34-5)	EC50 Algae: > 100 mg/l 96.00 Hours
	EC50 Water flea (Daphnia magna): 3184 mg/l 24.00 hours
	LC50 Bluegill (Lepomis macrochirus): 1300 mg/l 96.00 hours

* Estimates for product may be based on additional component data not shown.

Ecotoxicity	Contains a substance which causes risk of hazardous effects to the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Butyl Carbitol (CAS 112-34-5)	1.0 % N230
ETHYLENE GLYCOL (CAS 107-21-1)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Butyl Carbitol (CAS 112-34-5)	Listed. N230
ETHYLENE GLYCOL (CAS 107-21-1)	Listed.

CERCLA (Superfund) reportable quantity

ETHYLENE GLYCOL: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - Yes Chronic Health - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

Butyl Carbitol (CAS 112-34-5)	500 LBS
ETHYLENE GLYCOL (CAS 107-21-1)	500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Butyl Carbitol (CAS 112-34-5)	Listed.
ETHYLENE GLYCOL (CAS 107-21-1)	Listed.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings Health: 2
Flammability: 0
Instability: 0

Issue date 01-08-2014

A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Nitrogen (Expellant)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Nitrogen (Expellant)
Other Trade Names	N_2
Product Description	Expellant
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Flammable Gas

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
Not considered carcinogenic by NTP, IARC, and OSHA.

Target Organs
Respiratory System

Health Effects - Eyes
Non-irritating gas

Health Effects - Skin
Non-irritating gas

Health Effects - Ingestion
Ingestion is not a possible route of exposure.

Health Effects - Inhalation
Avoid direct inhalation of undiluted gas. Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Nitrogen	7727-37-9 EC#231-783-9	100%	None	Non Flammable Gas

4. FIRST AID MEASURES

Eyes
No specific measures.

Skin
No specific measures.

Ingestion
Ingestion is not considered a potential route of exposure.

Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
All known extinguishing media can be used. Use extinguishing media appropriate for containers in the area.

Unusual Fire and Explosion Hazards
Containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Material is a normal atmospheric gas. Remove leaking cylinder to a safe place. Ventilate the area. Wear self contained breathing apparatus when entering confined spaces unless atmosphere is proven to be safe.

7. HANDLING AND STORAGE

Cylinders should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike against each other. Never apply flame or localized heat directly to any part of the cylinder. Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Nitrogen
None
Engineering Control Measures
Use with adequate ventilation (natural or mechanical), especially in a confined space.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.

Hand Protection
Use leather or sturdy work gloves when handling cylinders.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Compressed gas
Color	Colorless
Odor	None
Specific Gravity	Not applicable
Boiling Range/Point (°C/F)	-321°F
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	0.2 g/l
Vapor Density (Air = 1)	0.97.
Vapor Pressure	Not determined
Gas Density	0.075 lb/ft^3 @70°F as vapor
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
Extremely high temperatures - flames

Materials to Avoid
None known

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
None

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Simple asphyxiant.

11. TOXICOLOGICAL INFORMATION

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
Nitrogen occurs naturally in the atmosphere.

Persistence/Degradability
Nitrogen occurs naturally in the atmosphere.

Bio-accumulation
Nitrogen occurs naturally in the atmosphere.

Ecotoxicity
No data available

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. If spilled, contents will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Nitrogen, compressed, 2.2, UN1066
UN Proper Shipping Name	Nitrogen, compressed
UN Class	(2.2) Non-Flammable Gas
UN Number	UN1066
UN Packaging Group	Not applicable

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.
Non Flammable Gas

R phrases
None

S phrases
S9 Keep container in a well ventilated place.

15. REGULATORY INFORMATION

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing
This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing
All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS) or are exempt from listing.

DSL/NDSL (Canadian) Listing
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification
A

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law
All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimis concentration include: Nitrogen

PA Right To Know Law
This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Nitrogen

NJ Right To Know Law
This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Nitrogen

California Proposition 65
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)
This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard - Pressure Hazard

SARA Title III Sect. 313
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 0
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

16. OTHER INFORMATION

HMIS Ratings
HMIS Code for Health - 0
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"NITROGEN"
Chemical Name:	Nitrogen.
CAS No.:	7727-37-9.
Chemical Formula:	N_2.
EINECS Number:	231-783-9.

1.2. Use of the preparation

The intended or recommended use of this preparation is to discharge a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	FLAG FIRE
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-732-3465
Internet/Home Page:	http://www.flagfire.com
Date of Issue:	May, 2004

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.	Ingredient Name:	Nitrogen.
	Chemical Formula:	N_2.
	CAS No.:	7727-37-9.
	EINECS Number:	231-783-9.
	Concentration, Wt %:	100%.
	Hazard Identification:	See Heading 3.

2.2. (i) There are no substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, in concentrations equal to or greater than those laid down in the table set out in Article 3(3) of Directive 1999/45/EC, nor with lower limits given in Annex I to Directive 67/548/EEC or in Annexes II, III or V to Directive 1999/45/EC.

(ii) There are no substances for which there are Community workplace exposure limits, which are not already included in (i) above.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

EU Classification:	Nonflammable Gas.
R	None.
S 9	Keep container in a well ventilated place.

Limit Values for Exposure: None established.

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, I.A.R.C., or OSHA.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	Non-irritating gas.
Skin Contact:	Non-irritating gas.
Inhalation:	Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations of vapor can cause dizziness, shortness of breath, unconsciousness, or even death.
Ingestion:	Non-irritating gas. Not a probable route of exposure.
Chronic Overexposure:	No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT:

This is a component of the atmosphere.

4. FIRST AID MEASURES

Eye Contact:	Avoid direct contact of high pressure gas discharge.
Skin Contact:	Avoid direct contact of high pressure gas discharge.
Inhalation:	Avoid direct inhalation of undiluted gas. Gas is an asphyxiant.
Ingestion:	Not a probable route of exposure.

5. FIRE-FIGHTING MEASURES

Non-flammable gas. Use agent appropriate to surrounding material.

Though gas cylinders are equipped with pressure and temperature relief devices, they should be removed from high temperature areas or fires, if safe to do so, to avoid risk of rupture.

There are NO extinguishing media which must not be used for safety reasons.

NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

Material is a normal atmospheric gas.

NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.

Secure to prevent falling. Do not move without safety cap in place to prevent damage to valve.

See incompatibility information in Heading 10.

7.2. Storage

Store cylinders with restraints to prevent possibility of rupture. Store as a compressed gas in DOT approved vessels.

Keep safety cap in place while in storage.

See incompatibility information in Heading 10.

Store in original container. Keep tightly closed until used.

There is NO danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is to discharge a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

There are NO currently occupational exposure limit values for this component.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Exposure to high concentrations requires the use of self-contained breathing apparatus. Other respirators will not protect in an oxygen deficient atmosphere.

8.2.1.2. Hand protection

Use leather gloves when handling cylinders.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

None needed. This material is a normal atmospheric gas.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Colorless gas.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	–195.8 °C.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	Not determined.
Relative Density:	Not applicable.
Solubility:	
– Water solubility:	Not soluble.
– Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not determined.
Viscosity:	Not determined.
Vapor density (Air = 1):	0.98.
Evaporation rate:	Not determined.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

Extremely high temperatures, as in a fire may cause a cylinder to fail.

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

None known.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will not occur.

Combustion or decomposition products will not form.

11. TOXICOLOGICAL INFORMATION

Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations of vapor can cause dizziness, shortness of breath, unconsciousness, or even death.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

This material is a normal atmospheric gas.

12.2. Mobility

This material is a normal atmospheric gas.

12.3. Persistence and degradability

This material is a normal atmospheric gas.

12.4. Bioaccumulative potential

This material is a normal atmospheric gas.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	None

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.
This material is a normal atmospheric gas.

14. TRANSPORT INFORMATION

Hazard Class or Division:	Nitrogen, Compressed, Class 2.2, UN1066.
Label:	Non-flammable gas.
Emergency response guide page number:	121; EMS (Intl): 2-04.

For additional transport information, contact Flag Fire.
This material is a normal atmospheric gas.

15. REGULATORY INFORMATION

EU Classification:		Nonflammable gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.
Exposure Limit Values:		None.
EINECS Status:		This component is included in EINECS inventories.
EPA TSCA Status		This component is included in TSCA inventories.
Canadian DSL (Domestic Substances List):		This component is included in DSL inventories.
Environmental restrictions:		None are known.
Restrictions on Marketing and Use:		None are known.

Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

Toxicological information added from the EINICS ESIS (Existing Substances Information System). A rating under WHMIS has been added, following the Canadian guidelines.

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	0	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated **A Compressed Gas.**

Format is from directive 2001/58/EC.
EINECS data is from http://exb.jrc.it/existing-chemicals/

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. FLAG FIRE SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

N/A = Not Applicable NDA = No Data Available

Praxair Material Safety Data Sheet

1. Chemical Product and Company Identification

Product Name: Nitrogen, compressed	**Trade Names:** Nitrogen, Medipure® Nitrogen, Extendapak® Nitrogen
Chemical Name: Nitrogen	**Synonyms:** Dinitrogen, Refrigerant R728
Chemical Family: Permanent gas	**Product Grades:** 4.8; 5.0, 5.5, 6.0 SPG; 4.8 VEZ; 5.0 UHP; Bev; Extendapak®; NF 4.8, 5.0 MD; 4.8 OF; 4.8 Z; 5.0 VOCF; 5.0 UZAM; 5.5 ECD; 6.0 Research; Industrial, 5.0, 5.5 LaserStar; 5.5 TA; 4.8 OF; 5.5 CE; 5.5 EC; 5.5 TG

Telephone: **Emergencies:** 1-800-645-4633* **Company Name:** Praxair, Inc.
CHEMTREC: 1-800-424-9300* 39 Old Ridgebury Road
Routine: 1-800-PRAXAIR Danbury, CT 06810-5113

**Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).*

2. Hazards Identification

EMERGENCY OVERVIEW

WARNING! High-pressure gas.
Can cause rapid suffocation.
May cause dizziness and drowsiness.
Self-contained breathing apparatus may be required by rescue workers.
Under ambient conditions, this a colorless, odorless, inert gas.

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200).

POTENTIAL HEALTH EFFECTS:

Effects of a Single (Acute) Overexposure

Inhalation. Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headache, drowsiness, dizziness, excitation, excess salivation, vomiting, and unconsciousness. Lack of oxygen can kill.

Skin Contact. No harm expected.

Swallowing. An unlikely route of exposure. This product is a gas at normal temperature and pressure.

Eye Contact. No harm expected.

Effects of Repeated (Chronic) Overexposure. No harm expected.

Other Effects of Overexposure. Asphyxiant. Lack of oxygen can kill.

A vertical line in the left margin indicates revised or new material.

Medical Conditions Aggravated by Overexposure. The toxicology and the physical and chemical properties of nitrogen suggest that overexposure is unlikely to aggravate existing medical conditions.

CARCINOGENICITY: Nitrogen is not listed by NTP, OSHA, or IARC.

POTENTIAL ENVIRONMENTAL EFFECTS: None known. For further information, see section 12, Ecological Information.

3. Composition/Information on Ingredients

See section 16 for important information about mixtures.

COMPONENT	CAS NUMBER	CONCENTRATION
Nitrogen	7727-37-9	>99%*

**The symbol > means "greater than."*

4. First Aid Measures

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

SKIN CONTACT: An unlikely route of exposure. This product is a gas at normal temperature and pressure.

SWALLOWING: An unlikely route of exposure. This product is a gas at normal temperature and pressure.

EYE CONTACT: An unlikely route of exposure. This product is a gas at normal temperature and pressure.

NOTES TO PHYSICIAN: *There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.*

5. Fire Fighting Measures

FLAMMABLE PROPERTIES: Nitrogen cannot catch fire.

SUITABLE EXTINGUISHING MEDIA: Nitrogen cannot catch fire. Use media appropriate for surrounding fire.

PRODUCTS OF COMBUSTION: Not applicable.

PROTECTION OF FIREFIGHTERS: WARNING! High-pressure gas. Asphyxiant. Lack of oxygen can kill. Evacuate all personnel from danger area. Immediately deluge cylinders with water from maximum distance until cool; then move them away from fire area if without risk. Shut off flow if you can do so without risk. Self-contained breathing apparatus may be required by rescue workers. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR1910 Subpart L—Fire Protection.

Specific Physical and Chemical Hazards. Heat of fire can build pressure in cylinder and cause it to rupture. No part of cylinder should be subjected to a temperature higher than 125°F (52°C). Nitrogen cylinders are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.)

Protective Equipment and Precautions for Firefighters. Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

WARNING! High-pressure gas.

Personal Precautions. Asphyxiant. Lack of oxygen can kill. Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off flow if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.

Environmental Precautions. Prevent waste from contaminating the surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: ***Protect cylinders from damage.*** Use a suitable hand truck to move cylinders; do not drag, roll, slide, or drop. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. Never insert an object (e.g., wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Open valve slowly. Close valve after each use; keep closed even when empty. If valve is hard to open, discontinue use and contact your supplier. For other precautions in using nitrogen, see section 16.

PRECAUTIONS TO BE TAKEN IN STORAGE: ***Store and use with adequate ventilation. Always secure cylinders upright to keep them from falling or being knocked over.*** Install valve protection cap, if provided, firmly in place by hand. Store only where temperature will not exceed 125°F (52°C). Store full and empty cylinders separately. Use a first-in, first-out inventory system to prevent storing full cylinders for long periods.

RECOMMENDED PUBLICATIONS: For further information on storage, handling, and use, see Praxair publication P-14-153, *Guidelines for Handling Gas Cylinders and Containers*. Obtain from your local supplier.

8. Exposure Controls/Personal Protection

COMPONENT	OSHA PEL	ACGIH TLV-TWA (2013)
Nitrogen	N.E.*	Simple asphyxiant

*N.E.–Not Established.

IDLH = Not available.

ENGINEERING CONTROLS:

Local Exhaust. Use a local exhaust system, if necessary, to prevent oxygen deficiency.

Mechanical (General). General exhaust ventilation may be acceptable if it can maintain an adequate supply of air.

Special. None

Other. None

PERSONAL PROTECTIVE EQUIPMENT:

Skin Protection. Wear work gloves when handling cylinders and metatarsal shoes for cylinder handling. Select in accordance with OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Eye/Face Protection. Wear safety glasses when handling cylinders. Select in accordance with OSHA 29 CFR 1910.133.

Respiratory Protection. None required under normal use. Air-supplied respirators must be used in confined spaces or in an oxygen-deficient atmosphere. Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134. Select in accordance with 29 CFR 1910.134 and ANSI Z88.2.

9. Physical and Chemical Properties

APPEARANCE:	Colorless gas
ODOR:	Odorless
ODOR THRESHOLD:	Not available.
PHYSICAL STATE:	Gas at normal temperature and pressure
pH:	Not applicable.
MELTING POINT at 1 atm:	-346°F (-210°C)
BOILING POINT at 1 atm:	-320.44°F (-195.80°C)
FLASH POINT (test method):	Not applicable.
EVAPORATION RATE (Butyl Acetate = 1):	Not applicable.
FLAMMABILITY:	Nonflammable
FLAMMABLE LIMITS IN AIR, % by volume:	**LOWER:** Not applicable. **UPPER:** Not applicable.
LIQUID DENSITY at boiling point and 1 atm:	50.7 lb/ft^3 (808.5 kg/m^3)
VAPOR PRESSURE at 68°F (20°C):	Not applicable.
VAPOR DENSITY at 70°F (21.1°C) and 1 atm:	0.0724 lb/ft^3 (1.160 kg/m^3)
SPECIFIC GRAVITY (H_2O = 1) at 19.4°F (-7°C):	Not available.
SPECIFIC GRAVITY (Air = 1) at 70°F (21.1°C) and 1 atm:	0.967
SOLUBILITY IN WATER, vol/vol at 32°F (0°C)	0.023
PARTITION COEFFICIENT: n-octanol/water:	Not available.
AUTOIGNITION TEMPERATURE:	Not applicable.
DECOMPOSITION TEMPERATURE:	Not available.
PERCENT VOLATILES BY VOLUME:	100
MOLECULAR WEIGHT:	28.01
MOLECULAR FORMULA:	N_2

10. Stability and Reactivity

CHEMICAL STABILITY: ☐ Unstable ☒ Stable

CONDITIONS TO AVOID: High temperatures, exposure to lithium, neodymium, titanium and magnesium

INCOMPATIBLE MATERIALS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

POSSIBILITY OF HAZARDOUS REACTIONS: ☒ May Occur ☐ Will Not Occur

Under certain conditions, nitrogen can react violently with lithium, neodymium, titanium [above 1472°F (800°C)], and magnesium to form nitrides. At high temperature it can also combine with oxygen and hydrogen.

11. Toxicological Information

ACUTE DOSE EFFECTS: Nitrogen is a simple asphyxiant.

STUDY RESULTS: None known.

12. Ecological Information

ECOTOXICITY: No adverse ecological effects expected.

OTHER ADVERSE EFFECTS: Nitrogen does not contain any Class I or Class II ozone-depleting chemicals.

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

14. Transport Information

DOT/IMO SHIPPING NAME: Nitrogen, compressed

HAZARD CLASS:	2.2	**PACKING GROUP/Zone:**	NA*	**IDENTIFICATION NUMBER:**	UN1066	**PRODUCT RQ:**	None

SHIPPING LABEL(s):	NONFLAMMABLE GAS
PLACARD (when required):	NONFLAMMABLE GAS

* Not applicable.

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, nonventilated compartment of a vehicle can present serious safety hazards.

Shipment of compressed gas cylinders that have been filled without the owner's consent is a violation of federal law [49 CFR 173.301(e)].

MARINE POLLUTANTS: Nitrogen is not listed as a marine pollutant by DOT.

15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

U.S. FEDERAL REGULATIONS:

EPA (ENVIRONMENTAL PROTECTION AGENCY)

CERCLA: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (40 CFR Parts 117 and 302):

Reportable Quantity (RQ): None

SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

SECTIONS 302/304: Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

TPQ: None
EHS RQ (40 CFR 355): None

SECTIONS 311/312: Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

IMMEDIATE: No	**PRESSURE:** Yes
DELAYED: No	**REACTIVITY:** No
	FIRE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Nitrogen is not subject to reporting under Section 313.

40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION: Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Nitrogen is not listed as a regulated substance.

TSCA: TOXIC SUBSTANCES CONTROL ACT: Nitrogen is listed on the TSCA inventory.

OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119: PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

Nitrogen is not listed in Appendix A as a highly hazardous chemical.

STATE REGULATIONS:

CALIFORNIA: Nitrogen is not listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

PENNSYLVANIA: Nitrogen is subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

16. Other Information

Be sure to read and understand all labels and instructions supplied with all containers of this product.

NOTE: *The suitability of nitrogen as a component in underwater breathing gas mixtures is to be determined by or under the supervision of personnel experienced in the use of underwater breathing gas mixtures and familiar with the physiological effects, methods employed, frequency and duration of use, hazards, side effects, and precautions to be taken.*

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: ***High-pressure gas. Use piping and equipment adequately designed to withstand pressures to be encountered.*** Use a blackflow prevention device in any piping. ***Gas can cause rapid suffocation because of oxygen deficiency.*** Store and use with adequate ventilation. ***Never work on a pressurized system.*** If there is a leak, close the cylinder valve. Blow the system down in a safe and environmentally sound manner in compliance with all federal, state, and local laws; then repair the leak. ***Never place a compressed gas cylinder where it may become part of an electrical circuit.***

Mixtures. When you mix two or more gases or liquefied gases, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, gases and liquids have properties that can cause serious injury or death.

HAZARD RATING SYSTEMS:

NFPA RATINGS:		HMIS RATINGS:	
HEALTH	= 0	HEALTH	= 0
FLAMMABILITY	= 0	FLAMMABILITY	= 0
INSTABILITY	= 0	PHYSICAL HAZARD	= 3
SPECIAL	= SA (CGA recommends this to designate Simple Asphyxiant.)		

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED:	0-3000 psig	CGA-580
	3001-5500 psig	CGA-680
	5001-7500 psig.	CGA-677
PIN-INDEXED YOKE:	0-3000 psig	CGA-960 (medical use)
ULTRA-HIGH-INTEGRITY CONNECTION:	0-3000 psig	CGA-718

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlet V-1 listed below.

Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information can be found in the following materials published by the Compressed Gas Association, Inc. (CGA), www.cganet.com.

AV-1	*Safe Handling and Storage of Compressed Gases*
G-10.1	*Commodity Specification for Nitrogen*
P-1	*Safe Handling of Compressed Gases in Containers*
P-9	*Inert Gases – Argon, Nitrogen, and Helium*
SB-2	*Oxygen-Deficient Atmospheres*
V-1	*Compressed Gas Cylinder Valve Inlet and Outlet Connections*
—	*Handbook of Compressed Gases*

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

Praxair MSDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current MSDSs for these products, contact your Praxair sales representative or local distributor or supplier, or download from www.praxair.com. If you have questions regarding Praxair MSDSs, would like the form number and date of the latest MSDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (**Phone:** 1-800-PRAXAIR; **Address:** Praxair Call Center, Praxair, Inc., PO Box 44, Tonawanda, NY 14151-0044).

PRAXAIR®

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113

Printed in USA

ANSUL

MATERIAL SAFETY DATA SHEET

NITROGEN

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	NITROGEN
Version #	01
Revision date	01-08-2014
CAS #	7727-37-9
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Contents under pressure. Heat may cause the containers to explode.
OSHA regulatory status	This product is considered not hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Eyes	None known.
Skin	None known.
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Ingestion	Not a likely route of entry.
Potential environmental effects	Ecological injuries are not known or expected under normal use.

3. Composition / Information on Ingredients

Non-hazardous components	CAS #	Percent
NITROGEN	7727-37-9	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Flush thoroughly with water for at least 15 minutes. Get medical assistance.
Skin contact	Rinse with water.
Inhalation	Remove to fresh air.
Ingestion	Not likely, due to the form of the product.
General advice	If you feel unwell, seek medical advice (show the label where possible).

5. Fire Fighting Measures

Flammable properties	The product is not flammable. No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Protection of firefighters	
Specific hazards arising from the chemical	*Contents under pressure.* Pressurized container may explode when exposed to heat or flame.
Specific methods	None known.

6. Accidental Release Measures

Personal precautions	None known.
Environmental precautions	No special environmental precautions required.
Methods for containment	Move the cylinder to a safe and open area if the leak is irreparable.
Methods for cleaning up	Not applicable.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Handle and open container with care.
Storage	Contents under pressure. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment	
Eye / face protection	Not normally needed.
Skin protection	No special protective equipment required.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Compressed gas.
Color	Colorless.
Odor	Odorless.
Physical state	Gas.
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	-320.8 °F (-195.79 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	0.67
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.
Molecular weight	28.01 g/mol
Molecular formula	N2

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	Excessive heat.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological Information

Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Further information	This product has no known adverse effect on human health.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not applicable.
Contaminated packaging	Not applicable.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1066
Proper shipping name	Nitrogen, compressed
Hazard class	2.2
Subsidiary hazard class	2.2
Packaging exceptions	306
Packaging non bulk	302
Packaging bulk	314, 315
ERG number	121

DOT

15. Regulatory Information

US federal regulations

This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - No Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

NITROGEN (CAS 7727-37-9) Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.
HMIS® ratings	Health: 0 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 0 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	01-08-2014

AMERICAN FORMULA

ORANGE CLEAN

NFP/HMIS : Health -1
Flammability - 0
Reactivity - 0

Complies With USDL Safety and Health Regulations, (29 CFR 1910.200)
Material Safety Data Sheet
US Department Of Labor

SECTION - 1 CHEMICAL AND COMPANY IDENTIFICATION

PRODUCT NAME: Orange Clean
PRODUCT USE: Degreaser

American Formula
4720 Frederick Drive, S.W.
Atlanta, GA 30336

EMERGENCIES: 1-800-255-3924
REVISION DATE: 03/30/05

SECTION - 2 COMPOSITION OF INGREDIENTS

CAS # CHEMICAL NAMES Wt% TLV (UNITS)
None

SECTION - 3 HAZARDS INFORMATION

PRIMARY ROUTE(S) OF ENTRY: Skin contact /absorption and inhalation
SIGNS AND SYMPTOMS OF OVEREXPOSURE: Gastrointestinal irritation (nausea, vomiting, diarrhea), irritation to nose, throat, and respiratory tract.
TARGET ORGAN EFFECTS: Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals and may aggravate pre-existing disorders or these organs in humans: chronic ingestion may cause kidney and liver lesions at high doses.
IMMEDIATE HEALTH EFFECTS
EYES: Exposure may cause noticeable pain, and severe irritation and transient corneal injury.
SKIN: Exposure may cause mild skin irritation. Prolonged or repeated exposure may dry the skin. Symptoms may include redness, burning, drying and cracking and skin burns. Additional symptoms: of skin contact may include: allergic reaction. Skin absorption is possible, but harmful effects are not expected from this route of exposure under normal handling and use.
INHALATION: Exposure to vapor or mist is possible. Short-term inhalation is not likely to cause harmful effects: breathing large amounts may be harmful. Symptoms are more typically seen at air concentrations exceeding the recommended exposure limits.
INGESTION: Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects: swallowing large amounts may be harmful.
REPRODUCTIVE / DEVELOPMENTAL INFORMATION: No Data
CARCINOGENIC INFORMATION: This material is not listed as a carcinogen by IARC, NTP, or OSHA
LONG TERM EFFECTS: No Data

SECTION - 4 FIRST AID MEASURES

EYES- Immediately flush with water. Remove contact lenses, if applicable, and continue flushing with water for 15 minutes. Call physician immediately.
SKIN-Immediately flush with water for 15 minutes. Call a physician if irritation persists. Completely decontaminate clothing, shoes, and leather goods before reuse or discard.
INHALATION- If symptoms develop move victim to fresh air. If symptoms persist, call a physician.
INGESTION- Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water or milk. Call a physician, immediately. Never give anything by mouth if victim is unconscious, is rapidly losing consciousness or is convulsing.

SECTION - 5 FIRE FIGHTING MEASURES

FLASH POINT: No Flash at Boil (C.C. method)
EXPLOSIVE LIMITS: Not Applicable
AUTOIGNITION TEMPERATURE: Not Applicable
HAZARDOUS PRODUCTS OF COMBUSTION: Not Applicable
EXTINGUISHING MEDIA: Not Applicable
FIRE FIGHTING INSTRUCTIONS: Avoid contact with this material. Avoid walking in spilled material. Wear protective clothing for skin and eyes

SECTION - 6 ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Absorb with an inert solid and scoop up for disposal, then rinse soiled area with water down the drain.
LARGE SPILL: Stop leak at the source and collect into a suitable container, then treat as a small spill.

SECTION - 7 HANDLING AND STORAGE

HANDLING: Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.
STORAGE: Store in a cool, dry place. Keep container closed when not in use.

SECTION - 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE PROTECTION: Chemical Splash goggle in compliance with OSHA regulations are advised: however , OSHA regulations also permit other type safety glasses. Consult your safety representative.
SKIN PROTECTION: Wear rubber gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.
RESPIRATORY PROTECTION: If workplace exposure limits of product or any component are exceeded (see exposure guidelines), NIOSH/OSHA approved air supplied respirator is advised in the absence of proper environmental control. OSHA relations also permit other NIOSH/OSHA respirators (negative pressure type) under specific conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.
ENGINEERING CONTROLS: Provide sufficient mechanical (general and local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

SECTION - 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: Thin, yellow liquid with a citrus odor
pH CONCENTRATE: 11.5-12.5
VAPOR PRESSURE: Unknown
VAPOR DENSITY: Unknown
BOILING POINT: 212 Degrees Fahrenheit
SOLUBILITY IN WATER: Complete
PERCENT VOLATILE: 99%
SPECIFIC GRAVITY: (H2O =1) 1.01 +/- 0.02

SECTION - 10 STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable
CONDITIONS TO AVOID: Temperature Extremes
INCOMPATIBILITY: None
HAZARDOUS DECOMPOSITION: None
HAZARDOUS POLYMERIZATION: Will not Occur

SECTION - 11 TOXICOLOGICAL INFORMATION

NO DATA AVAILABLE

SECTION - 12 ECOLOGICAL INFORMATION

NO DATA AVAILABLE

SECTION - 13 DISPOSAL CONSIDERATION

WASTE DISPOSAL INFORMATION: Dispose of in accordance with all applicable Federal, State, and Local regulations.
RCRA INFORMATION: If this material becomes a waste, it would be considered hazardous under 40 CFR 261.22. and would be classified as EPA Waste Number D002.

SECTION - 14 TRANSPORT INFORMATION

DOT INFORMATION 49 CFR 172.101
DOT Description: 33440 Class 55
DOT Hazard Class: Non Hazardous
Hazardous Component: None
REPORTABLE QUANTITY (RQ) - 49 CFR 172.101
Not Applicable

SECTION - 15 REGULATORY INFORMATION

US FEDERAL REGULATIONS:
TSCA (Toxic Substances Control Act) Status
TSCA (United States) the intentional ingredients of this product are listed.
CERCLA RQ - 40 CFR 355 Appendix A: None
SARA 302 Components 40 CFR Appendix A: None
Section 311/312 Hazard Class 40 CFR 370.2
Immediate (X) Delayed (X) Fire ( ) Reactivity ( ) Sudden Release of Pressure ( )
SARA 313 Components - 40 CFR 372.65
CAS # Chemical Names %
None
STATE AND LOCAL REGULATIONS
California Proposition 65: None
California SCAQMD Rule 443.1 VOC's >100g/L
North Carolina Administrative Code 2D.1104 and 2B.0610: None
South Carolina Regulation 62.5 Standard Number 8
None

SECTION - 16 OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to their circumstances.
This information was compiled from current manufacturer's MSDS's of the component parts of the product. as well as other sources, such as:
Code of Federal Regulations 29, Revised as of July 1. 1994.
Code of Federal Regulations 40, Revised as of July 1, 1994.
ACGIH, Guide to Occupational Exposure Values, 1996.
ANSI Z129.1-1994, Precautionary Labeling for Hazardous Industrial Chemicals.
Hazard Communication Handbook, A Right To Know Compliance Guide. Craig A. Moyer & Michael Francis. Clark Broadman Company. Ltd. New York, NY 1992
\RCRA Regulations and Keyword Index, Compiled and Published by McCoy and Associates, Inc Lakewood, Colorado. 1992.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the preparation

Product Name:	"PLUS-FIFTY B"
Chemical Name:	N/A -- This is a mixture/preparation.
CAS No.:	N/A -- This is a mixture/preparation.
Chemical Formula:	N/A -- This is a mixture/preparation.
EINECS Number:	N/A -- This is a mixture/preparation.

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	ANSUL INCORPORATED
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-735-7411
Internet/Home Page:	http://www.ansul.com
Date of Issue:	April, 2005

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.

Ingredient Name:	Sodium Bicarbonate.
Chemical Formula:	$NaHCO_3$.
CAS No.:	144-55-8.
EINECS Number:	205-633-8.
Concentration, Wt %:	60-75 %.
Hazard Identification:	See Heading 3.
Ingredient Name:	Calcium Carbonate.
Chemical Formula:	$CaCO_3$.
CAS No.:	471-34-1.
EINECS Number:	207-439-9.
Concentration, Wt %:	20-30 %.
Hazard Identification:	See Heading 3.
Ingredient Name:	Magnesium Stearate.
Chemical Formula:	$(C_{17}H_{35}CO_2)_2Mg$.
CAS No.:	557-04-0.
EINECS Number:	209-150-3.
Concentration, Wt %:	1-2 %.
Hazard Identification:	See Heading 3.
* Ingredient Name:	Blue Pigment (Hostaperm Blue).
Chemical Formula:	$C_{32}H_{16}CuN_8$.
CAS No.:	147-14-8.
EINECS Number:	205-685-1.
Concentration, Wt %:	<0.005 %.
Hazard Identification:	See Heading 3.

NOTE: Unless a component presents a severe hazard, it does not need to be considered in the MSDS if the concentration is less than 1%. [According to Directive 1999/45/EC].

* Product manufactured after November 2000 does not contain a blue pigment.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

Product:

EU Classification:	Xi	Irritant.
R Phrases:	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Components:

Sodium Bicarbonate.

This substance is not classified as dangerous according to Directive 1999/45/EC.

Calcium Carbonate.

EU Classification:	Xi	Irritant.
R Phrases:	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Limit Values for Exposure:

Nuisance dust limit:	OSHA TWA:	15 mg/m^3.
	ACGIH TLV-TWA	10 mg/m^3.

Neither this preparation nor the substances contained in it have been listed as carcinogenic by National Toxicology Program, IARC, or OSHA.

AS PART OF GOOD INDUSTRIAL AND PERSONAL HYGIENE AND SAFETY PROCEDURE, avoid all unnecessary exposure to the chemical substance and ensure prompt removal from skin, eyes, and clothing.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	Mildly irritating for short periods of time.
Skin Contact:	May be mildly irritating.
Inhalation:	Not a likely route of entry. May be irritating to mucous membranes.
Ingestion:	Not an expected route of entry.

Chronic Overexposure: Lungs, Gastrointestinal, and kidney can be affected.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None known.

FOR ENVIRONMENT:

No adverse effects expected.

4. FIRST AID MEASURES

Eye Contact:	Flush with water for a minimum of 15 minutes while holding lids open. If irritation persists seek medical attention.
Skin Contact:	Wash affected area with soap and water. If irritation persists seek medical attention.
Inhalation:	Remove from exposure. If irritation persists seek medical attention.
Ingestion:	If patient is conscious, dilute by drinking large quantities of water.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.

There are NO extinguishing media which must not be used for safety reasons.

NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.

Clean up: Sweep up and reuse or place in a closed container for disposal, see Heading 13.

NO harm to the environment is expected from an accidental release of this preparation.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.
See incompatibility information in Heading 10.

7.2. Storage

NO special conditions are needed for safe storage.
See incompatibility information in Heading 10.
Store in original container. Keep tightly closed until used.
There is minimal danger to the environment from a storage release.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Nuisance dust limit:	OSHA TWA:	15 mg/m^3.
	ACGIH TLV-TWA:	10 mg/m^3.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Dust mask where dustiness is prevalent, or TLV is exceeded. Use mechanical filter respirator if exposure is prolonged. Mechanical ventilation is preferred.

8.2.1.2. Hand protection

None normally needed. Use impervious gloves if irritation occurs.

8.2.1.3. Eye protection

Chemical goggles recommended as mechanical barrier for prolonged exposure.

8.2.1.4. Skin protection

No special equipment is needed.

8.2.2. Environmental exposure controls

No special controls are needed.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	White or light blue powder.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	Not applicable.
Flash point:	None.
Flammability *(solid/gas)*:	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	Not applicable.
Relative Density:	Not applicable.
Solubility:	
– Water solubility:	Partly soluble.
-- Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not applicable.
Viscosity:	Not applicable.
Vapor density (Air = 1):	Not applicable.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature: Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

There are NO known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

Strong acids, NaK alloy, and $NH_4H_2PO_4$.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will NOT occur.

Combustion or decomposition products include carbon dioxide.

11. TOXICOLOGICAL INFORMATION

This product has not been tested for toxicological effects. Product is treated as a nuisance dust.

Components:

Sodium Bicarbonate:

Oral LD50 (rat) = 4,220 mg/kg.
Skin irritation (rabbit) = Not irritating.
Skin irritation (human) = Slightly irritating.
Eye irritation (rabbit) = Not irritating.
Eye irritation (human) = Slightly irritating.
May be irritating to mucous membranes and upper respiratory tract.
May be harmful if swallowed in large amounts.

Calcium Carbonate:

Oral (rat) LD_{50} = 6,450 mg/kg.
Skin irritation (rabbit) = 500 mg/24 hrs; Moderate.
Eye irritation (rabbit) = 750 ug/24 hrs; Severe.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

Not determined.

12.2. Mobility

Not determined.

12.3. Persistence and degradability

Not determined.

12.4. Bioaccumulative potential

Not determined.

12.5. Other adverse effects

Ozone depletion potential: None.
Photochemical ozone creation potential: None
Global warming potential: Carbon dioxide from decomposition or reaction is a global warming gas.

13. DISPOSAL CONSIDERATIONS

No harm to the environment is expected from this preparation.

Dispose of in compliance with national, regional, and local provisions that may be in force.

14. TRANSPORT INFORMATION

Hazard Class or Division: Not a hazardous substance.

For additional transport information, contact Ansul Incorporated.

NO harm to the environment is expected from this preparation.

15. REGULATORY INFORMATION

Product:

EU Classification:		Irritant.
R Phrases:	36/37/38	Irritating to eyes, respiratory system, and skin.
S Phrases:	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

Exposure Limit Values:

Nuisance dust limit:	OSHA TWA:	15 mg/m^3.
	ACGIH TLV-TWA	10 mg/m^3.

EINECS Status: All components are included in EINECS inventories or are exempt from listing.

EPA TSCA Status: All components are included in TSCA inventories or are exempt from listing.

Canadian DSL (Domestic Substances List): All components are included in the DSL or are exempt from listing.

Environmental restrictions: None are known.

Restrictions on Marketing and Use: None are known.

Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated: **D2B – Product may irritate eyes, skin, or mucous membrane.**

Format is from directive 2001/58/EC.
EINECS data is from http://ecb.jrc.it/existing-chemicals/
Data used to compile the data sheet is from Ansul Material Safety Data Sheet, February, 2002.

The EU Classification has been changed in accordance with Directive 1999/45/EC and information in the EINECS ESIS files (Existing Substances Information System).
Toxicological information added from the EINECS ESIS (Existing Substances Information System).
A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ANSUL SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

MSDS available at http://www.ansul.com

ANSUL

MATERIAL SAFETY DATA SHEET

PLUS-FIFTY C

Product Code: 2011-2-008 ANa | Issue Date: 01-08-2014

1. Product and Company Identification

Material name	PLUS-FIFTY C
Version #	01
Revision date	01-08-2014
CAS #	Mixture
Product Code	2011-2-008 ANa
Product use	Fire extiguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING Irritating to eyes and skin.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Avoid contact with eyes. Contact with eyes may cause irritation.
Skin	Avoid contact with the skin. May cause skin irritation.
Inhalation	Inhalation of dusts may cause respiratory irritation.
Ingestion	Not a likely route of entry.
Target organs	Eyes. Respiratory system. Skin.
Signs and symptoms	Irritation of eyes and mucous membranes.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
talc ($Mg_3H_2(SiO_3)_4$)	14807-96-6	2.5 - 10
Non-hazardous components	**CAS #**	**Percent**
COPPER PHTHALOCYANINE PIGMENT	147-14-8	0 - 0.1
Silicone fluid	63148-57-2	0.1 - 1
FULLERS EARTH	8031-18-3	2.5 - 10
SODIUM BICARBONATE	144-55-8	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. Get medical attention, if needed.

Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Hazardous combustion products	Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dust formation. Following product recovery, flush area with water.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Keep formation of airborne dusts to a minimum. Do not breathe dust. Avoid contact with eyes. Do not use in areas without adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling.
Storage	Keep container tightly closed. Guard against dust accumulation of this material. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	Form
talc (Mg3H2(SiO3)4) (14807-96-6)	TWA	2.0000 mg/m3	Respirable fraction.

U.S. - OSHA

Components	Type	Value	Form
talc (Mg3H2(SiO3)4) (14807-96-6)	TWA	2.0000 mg/m3	Respirable dust.
		0.1000 mg/m3	Respirable.
		2.4000 mppcf	Respirable.
		0.3000 mg/m3	Total dust.
		20.0000 mppcf	

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Do not get in eyes. Chemical goggles are recommended.
Skin protection	No special protective equipment required.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General hygiene considerations	Do not get in eyes.

9. Physical & Chemical Properties

Appearance	
Form	Powder.
Color	Blue.
Odor	Odorless.
Physical state	Solid.
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Incompatible materials	Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological Information

Toxicological information	The toxicity of this product has not been tested.
Local effects	Contact may irritate or burn eyes.
Chronic effects	Hazardous by OSHA criteria. Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

ACGIH Carcinogens

talc (Mg3H2(SiO3)4) (CAS 14807-96-6)	A4 Not classifiable as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

talc (Mg3H2(SiO3)4) (CAS 14807-96-6)	2B Possibly carcinogenic to humans. 3 Not classifiable as to carcinogenicity to humans.

12. Ecological Information

Ecotoxicological data

Components	Test Results
SODIUM BICARBONATE (144-55-8)	LC50 Western mosquitofish (Gambusia affinis): 7550 mg/l 96.00 hours

Ecotoxicity	Not expected to be harmful to aquatic organisms.

Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - Yes Chronic Health - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

talc (Mg3H2(SiO3)4) (CAS 14807-96-6) Listed.

16. Other Information

Further information	HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings	Health: 1* Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0
Disclaimer	The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
Issue date	01-08-2014

PORTER®
COATINGS

PORTER GUARD®
DTM Acrylic Primer/Finish

212
215

PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215 are general duty, waterborne, rust-inhibitive, 100% acrylic metal primers available in red or white. They are used primarily over properly prepared iron or steel and galvanized metal. They are also suitable for incidental application on aluminum, masonry, wood and old, chalky paint. Although designed for spray application, PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215 are suitable for brush and roller application. They may be topcoated with latex, alkyd or waterborne epoxy finishes.

USED FOR

- Priming steel, galvanized metal and incidental wood, masonry and aluminum
- Corrosion protection

FEATURES

- Versatile primer/finish
- Rust inhibitive
- Available in red or tintable white
- Good hiding
- Easy clean-up

RECOMMENDED SYSTEMS

PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215, applied at recommended film thickness, functions as a metal, wood and masonry primer under alkyd, latex and waterborne epoxy finishes. **Typical Finishes Over PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215:**

	FLAT	EGGSHELL / SATIN	SEMI-GLOSS	GLOSS
INTERIOR				
Latex	689, 999, 6109	389, 1119, 2809, 6129	109, 919, 1139, 6139	909, 2909, 6149
Alkyd		129	149, 439	2749, 4139
WB Epoxy			9549S	9371, 9549G
EXTERIOR				
Latex	519, 579, 719, 929,	599, 739, 2809, 3729	619, 919, 6029	909, 2909
Alkyd	(Not Recommended)			507, 2749, 4139

WB Epoxy (Epoxies are not recommended as exterior finishes.)

NOTE: See Porter Paints finishes data sheets for additional recommended systems appropriate for various substrates.

LIMITATIONS

Brush and roller application may require multiple coats to achieve the minimum required dry film thickness. Do not use on copper, brass or weathered aluminum, or on floors. Do not apply exterior in cold, damp or threatening weather; when temperature may drop below 50°F (10°C) within 12 hours; or in late afternoon (or anytime) when there is a threat of moisture condensing on the wet paint film. Do not apply in direct sunlight. Use for service below 180°F. **Protect from freezing.**

TECHNICAL DATA

Product Type:	Acrylic	
Colors:	212 Red	215 White
Sheen:	Flat	Flat
Percent Solids:		
Weight:	55 ± 2%	57 ± 2%
Volume:	43 ± 2%	44 ± 2%
PVC:	25 ± 2%	26 ± 2%
Weight/Gallon:	10.6 lb	10.8 lb
Viscosity (Initial):	90 - 95	110 - 120 Krebs Units
Thinner:	If necessary, thin sparingly with water up to ½ pint per gallon.	
Clean-up:	Warm, soapy water.	

Recommended Film Thickness (per coat):

Wet:	7.0 mils
Dry:	3.0 mils

Spread Rate on Iron/Steel (Theoretical): up to 230 sq. ft./gal.

Dry time (70°F @ 50% R.H.):

To Touch*:	1 hour
To Recoat:	4 hours

(Expect longer dry times at lower temperatures and higher relative humidity.)

Flash Point: >200°F (>93°C)

Flame Spread Rating: Class A (0-25)
(See Porter Technical Bulletin No. 9: Flame Spread Rating.)

Federal Specification Crossover: MIL-P-28577A; TT-P-001975
(See Porter Technical Bulletin No. 6: Federal Specification Performance Crossover.)

***NOTE:** This product, although fast dry to touch and to recoat, may require a slightly longer curing time than other types of acrylic formulations to reach hardness and adhesion levels sufficient to resist the "thumb nail scratch test." This is a function of the high resin formulation level, the nature of the resin, and the high film build required by the application. It does not reduce the performance of the product, nor does it create any adhesion concerns in normal use.

REGULATORY DATA

VOC (theoretical):	**212 Red**	**215 White**
As supplied:	1.13 lb/gal (135 g/l)	1.12 lb/gal (134 g/l)

212 215 PORTER GUARD DTM Acrylic Primer/Finish

SURFACE PREPARATION

Paint only clean, dry, deglossed and profiled (blasted, scarified or chemical treated) surfaces. Remove dirt, oils, grease, wax, release agents, sanding dust, paint remover, etc. with PORTERPREP™ Heavy Duty Cleaner No. 571, Soilax and water, Porter Paint Thinner No. 5132 or other appropriate cleaners per SSPC-SP 1 cleaning procedures. Remove loose paint, mill scale, rust, etc. by Hand Tool Cleaning (SSPC-SP 2), Power Tool Cleaning (SSPC-SP 3) or Commercial Blast Cleaning (SSPC-SP 6) (3/4-1 mil profile maximum). Treat galvanized surfaces with Galvaprep® 5. For mild service, treat rust with Metalprep® 79 (also clean other metals with Metalprep 79 prior to painting or as a pre-cleaner prior to other chemical treatment). Treat aluminum with Alumiprep® 33.

INSTRUCTIONS FOR USE

Tinting: Tint up to 6 ounces of Porter DESIGN SPECTRUM® Colorants as required. ***NOTE: For optimum corrosion protection avoid tinting when used direct to ferrous metals.***

Mixing: Stir or shake thoroughly before application.

Thinning: Thin sparingly with clean, potable water as necessary for proper application. Do not exceed ½ pint per gallon.

Clean-up: Clean tools and spray equipment immediately after use with warm soapy water.

Application:

Conditions:	***Temperature Range:***	50°F to 110°F (air, surface, paint) (Optimum paint temperature 65-85°F).
	Dew Point:	Surface temperature must be at least 5°F above the dew point.
	Relative Humidity:	Maximum 85%.
Equipment:	***Brushes:***	Use nylon or polyester brushes.
	Rollers:	Use ½" to ¾" Porter All Purpose Roller Covers or other synthetic roller covers.
	Airless Spray:	Minimum 28:1 Ratio Pump; .015"-.019" tip; 1800-2400 psi.
	Conventional Spray:	(Binks) 18 Gun; 66 Fluid Tip; 66 Air Cap; 20-50 psi Atomizing Pressure; 10-25 psi Fluid Pressure.
Directions:	***New Steel:***	Apply PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215 at recommended millage. Finish with one or two coats of the selected Porter finish.
	New Galvanized:	Apply a uniform coat of PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215. Finish with one or more coats of the selected Porter finish.
	Repaint:	Spot prime bare areas with one or more coats of PORTER GUARD DTM Acrylic Primer/Finish No's. 212/215 as required, then apply one or more coats of the selected Porter finish.

PRECAUTIONS

Prior to using this product, the user is specifically directed to obtain and read the current Material Safety Data Sheet and Label for this product. If, after reading these documents, you do not understand them, do not use this product. KEEP OUT OF REACH OF CHILDREN.

SHIPPING

Freight Classification: PAINT OR PAINT RELATED MATERIAL.

Packaging: 6 Quarts per carton; 4 Gallons per carton; 5-Gallon pail.

Shipping Weights: **212 Red:** 2.9 lb/qt (18.1 lb/carton); 11.4 lb/gal (46.5 lb/carton); 55.9 lb/5-gal.
215White: 3.0 lb/qt (18.4 lb/carton); 11.6 lb/gal (47.4 lb/carton); 57.0 lb/5-gal.

Porter Coatings 400 South 13th Street, Louisville, Kentucky 40203 1-800-332-6270
www.porterpaints.com. For Internet Ordering: www.getpaint.com

Kidde-Fenwal, Inc.
400 Main Street
Ashland MA 01721

Date: July 1997
Emergency Phone No.
CHEMETREC:
(800) 424-9300

Material Safety Data Sheet For Potassium Carbonate Liquid

Section I — Material Identification

Chemical Name: Potassium Carbonate Liquid
C.A.S.#: 584-08-7
Synonyms: Potassium Carbonate In Solution, Aqueous Potassium Carbonate, APC
Also: Pearl Ash, Potash-Hydrated
D.O.T. Identification No. : None
D.O.T. Hazard Guide: None
Trade Name: Carbonate of Potash — H.M.I.S.: 2-0-0
Chemical Formula: K_2CO_3 — R.Q.: None Required
D.O.T. Shipping Name: Potassium Carbonate Liquid
N.F.P.A. Registry: N/A
Chemical Family: Alkali
Labeling: N/A — Placard: None

Section II (See Section XI) — Ingredients & Hazards

Principal component: K_2CO_3 — C.A.S No.: 584-08-7
Percent: Greater than 40 wt.% in water solution
Hazardous mixtures of other liquids, solids or gases or gases: this material reacts violently with acids and liberates suffocating quantities of carbon dioxide.

Section III — Physical Data

Boiling Point: 228 °F (108.9 °C) — Spec. Gravity: 1.440
Freeze / Solidification Temp: -20 °F (-28.9 °C) — pH: Approximately 11.8
Vapor Pressure: Slightly Less Than Pure Water — Molecular Weight: 138.2
Vapor Density: N/A
Appearance/Odor: Water White, No Odor
Percent Volatile By Volume: 57.8%
Evaporation Rate: Slightly Less Than Pure Water
Solubility In Water: Complete

Section IV	Fire & Explosion Data

Flash Point (method): Non-combustible.
Extinguishing Media: Suitable for surrounding fire.
Auto Ignition Temperature: Not combustible.
Special Fire Fighting Procedures: If carbon dioxide is released, use an approved self-contained breathing apparatus.
Unusual Fire/Explosion Hazards: High temperatures due to fire or mixing with acids can cause this material to decompose releasing carbon dioxide gas.
Additional Information: If there is evidence of product decomposition, atmospheric tests should be run for carbon dioxide and oxygen content. Excessive quantities of carbon dioxide can cause suffocation of personnel in the immediate area.

Section V	Health Hazard Data

Threshold Limit Value: None
PEL: Not Listed
OSHA Limit Value: None Listed
ACIGIH Limit Value: Not Listed
NTP Carcinogen: Not Listed
IARC Carcinogen: Not Listed
Mutagenic: Not Listed
Reproductive Toxicity: None Listed
Medical Conditions Aggravated By Exposure: None
Primary Routes Of Exposure: Body Contact
Effects Of Exposure:

Inhalation:	- Cannot be inhaled.
Skin	- Causes mild irritation.
Eyes	- May cause injury.
Ingestion	- Causes irritation to the digestive and respiratory tract.

Emergency First Aid:

Inhalation	- Cannot be inhaled.
Skin	- Wash with water.
Eyes	- Flush with water for 15 minutes including . under the eyelids.
Ingestion	- Drink plenty of water or fruit juice, obtain services of a physician immediately.

Section VI	Reactivity Data

Stability: Stable under normal conditions

Conditions to avoid: Excessive heat or contact with acids

Incompatibility (materials to avoid): Acids and excessive heat

Hazardous decomposition products: Carbon dioxide is generated when reacted with acids. Large quantities of CO_2 in an enclosed area will result in lack of oxygen and may cause suffocation of personnel.

Polymerization: Will not polymerize

Section VII	Environmental Protection Procedures

Spill Response: Stop leaks. Spills, after containment, should be shoveled up or removed by vacuum truck (if liquid) to chemical waste area. Flush area with large amounts of water and dispose of wash water according to federal, state, and local regulation.

Waste Disposal: The materials resulting from cleanup operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all cleanup materials and any contaminated equipment in accordance with all applicable federal, state, and local health and environmental regulations. Shipments of waste material may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Insure that all responsible federal, state, and local agencies receive proper notification of disposal.

Section VIII	Special Protection Information

Eye Protection: Goggles
Respiratory Protection: Not Required
Ventilation Recommended: Not Required
Glove Type Recommended: Rubber Or Plastic

Section IX	Special Precautions

Hygienic practices in handling/storing: No unusual requirements since solution is non-hazardous
Precautions to be taken for handling/storing: Keep storage area separate from acids
Precautions for repair, maintenance of contaminated equipment: Drain and rinse with water

Section X	Transportation

Usual shipping containers: Tank cars and trucks, drums
Usual shelf life: Unlimited
Storage/transport temps: Ambient
Suitable storage materials/coatings: Coated steel-plastic

Section XI	Regulatory Information

Toxic Substances Control Act: This substance is listed on the Toxic Substances Control Act Chemical Substance Inventory 1985 Edition, Vol. 1.
Emergency Planning and Community Right to Know, per 40 CFR 355, Appendix A
Threshold Planning Quantity: None established
This product or mixture contains a toxic chemical or chemicals not subject to the reporting requirements of section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 - see Section II.
Comprehensive Response, Compensation and Liability Act (CERCLA): This product is not subject to CERCLA reporting requirements.

Kidde-Fenwal, Inc.'s information is drawn from recognized sources believed to be reliable. Kidde-Fenwal, Inc. makes no guarantees nor assumes any liability in connection with this information.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: PRO 1-GL 2PK SAFETY RED
Revision Date: 09/06/2011
Identification Number: 7564402
Product Use/Class: Topcoat/Alkyd
Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA
Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Mineral Spirits	64742-88-7	50.0	100 ppm	N.E.	100 ppm	N.E.
Ethylbenzene	100-41-4	1.0	100 ppm	125 ppm	100 ppm	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Causes eye irritation. Vapors irritating to eyes and respiratory tract. Combustible liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: May cause skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. May cause headaches and dizziness. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. Do NOT use mouth-to-mouth resuscitation.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: 104 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

Unusual Fire And Explosion Hazards: Keep containers tightly closed.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Avoid contact with eyes. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist. Wash thoroughly after handling. Wash hands before eating.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Keep away from heat, sparks, flame and sources of ignition. Keep container closed when not in use.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Liquid	Evaporation Rate:	Slower than Ether
Solubility in H2O:	None	Freeze Point:	N.D.
Specific Gravity:	0.925	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50
Mineral Spirits	>5000 mg/kg (Rat, Oral)	>1400 ppm (Rat, Inhalation, 4Hr)
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Paint, Not Regulated	Paint	Paint
Hazard Class:	N.A.	3	3
UN Number:	N.A.	UN1263	UN1263
Packing Group:	N.A.	III	III
Limited Quantity:	No	IMDG 34-08, 3.4.7	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY
Alkyd Resin	PROPRIETARY
Pigment Red 170	2786-76-7
Pigment Orange 34	15793-73-4

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY
Alkyd Resin	PROPRIETARY
Pigment Red 170	2786-76-7

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: B3 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2*	Flammability: 2	Physical Hazard: 0	Personal Protection: X

NFPA Ratings:

Health: 2	Flammability: 2	Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 443

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: PRO LSPR 6PK MARK SAFETY RED Revision Date: 05/31/2011

Identification Number: 2564838

Product Use/Class: Topcoat/ Aerosol

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL -TWA	OSHA PEL CEILING
Acetone	67-64-1	30.0	500 ppm	750 ppm	1000 ppm	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	N.E.	N.E.	N.E.	N.E.
Aliphatic Hydrocarbon	64742-89-8	15.0	100 ppm	N.E.	100 ppm	N.E.
Xylene	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
Magnesium Silicate	14807-96-6	5.0	2 mg/m3	N.E.	0.1 mg/m3 (Respirable)	N.E.
Naphtha	8032-32-4	5.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	5.0	10 mg/m3	N.E.	15 mg/m3 (Total Dust)	N.E.
Ethylbenzene	100-41-4	5.0	100 ppm	125 ppm	100 ppm	N.E.
Toluene	108-88-3	5.0	20 ppm	N.E.	200 ppm	300 ppm

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Harmful if swallowed. Extremely flammable liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by

IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.
May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Perforation of the pressurized container may cause bursting of the can. Isolate from heat, electrical equipment, sparks and open flame. Keep containers tightly closed. Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Use only in a well-ventilated area. Avoid breathing vapor or mist. Wash thoroughly after handling. Wash hands before eating.

Storage: Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of

NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.807	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Liquefied Petroleum Gas	N.E.	N.E.
Aliphatic Hydrocarbon	>5000 mg/kg (Rat, Oral)	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
Magnesium Silicate	N.E.	TCLo: 11 mg/m3 (Inhalation)
Naphtha	>5000 mg/kg (Rat, Oral)	N.E.
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Toluene	636 mg/kg (Rat, Oral)	>26700 ppm (Rat, Inhalation, 1Hr)

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Ethylbenzene	100-41-4
Toluene	108-88-3

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Limestone	1317-65-3

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Limestone	1317-65-3
Modified Alkyd	PROPRIETARY

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2* Flammability: 4 Reactivity: 0 Personal Protection: X

NFPA Ratings:

Health: 2 Flammability: 4 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 536

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and

recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: PRO LSPR 6PK SEMIGLOSS BLACK Revision Date: 06/30/2011

Identification Number: 239107

Product Use/Class: Topcoat/Aerosol

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Acetone	67-64-1	35.0	500 ppm	750 ppm	1000 ppm	N.E.
Liquefied Petroleum Gas	68476-86-8	25.0	N.E.	N.E.	N.E.	N.E.
Xylene	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
n-Butyl Acetate	123-86-4	10.0	150 ppm	200 ppm	150 ppm	N.E.
Methyl Ethyl Ketone	78-93-3	5.0	200 ppm	300 ppm	200 ppm	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.
Ethylbenzene	100-41-4	5.0	100 ppm	125 ppm	100 ppm	N.E.
Magnesium Silicate	14807-96-6	5.0	2 mg/m3	N.E.	0.1 mg/m3 (Respirable)	N.E.
Carbon Black	1333-86-4	5.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Harmful if swallowed. Extremely flammable liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness,

fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to methyl ethyl ketone in laboratory animals has been associated with liver abnormalities, kidney and lung damage. Fetotoxic/embryotoxic effects from inhalation have been seen in rats exposed to >1000ppm during gestation.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Perforation of the pressurized container may cause bursting of the can. Isolate from heat, electrical equipment, sparks and open flame. Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Contain spilled liquid with sand or earth. DO NOT use

combustible materials such as sawdust.

Section 7 - Handling And Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Avoid breathing vapor or mist. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use explosion-proof ventilation equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.772	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Liquefied Petroleum Gas	N.E.	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
n-Butyl Acetate	13100 mg/kg (Rat, Oral)	2000 ppm (Rat, Inhalation, 4 Hr)
Methyl Ethyl Ketone	N.E.	N.E.
Propylene Glycol Monobutyl Ether	2200 mg/kg (Rat, Oral)	N.E.
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Magnesium Silicate	N.E.	TCLo: 11 mg/m3 (Inhalation)
Carbon Black	>8000 mg/kg (Rat, Oral)	N.E.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Methyl Ethyl Ketone	78-93-3
Ethylbenzene	100-41-4

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2* Flammability: 4 Reactivity: 0 Personal Protection: X

NFPA Ratings:

Health: 2 Flammability: 4 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 548

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

SAFETY DATA SHEET

1. Identification

Product identifier **Propane**

Other means of identification

SDS number WC002

Product code UN1075

Recommended use Portable fuel.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 300 E. Breed St., Chilton, WI 5301
United States

Contact person Ann Stiefvater

E-mail address Ann.Stiefvater@worthingtonindustries.com

Telephone number 1-920-849-1740

Emergency telephone number 1-703-527-3887 International / CHEMTREC 1-800-424-9300 Domestic

2. Hazard(s) identification

Physical hazards Flammable gases — Category 1
Gases under pressure — Liquefied gas

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage Protect from sunlight. Store in a well-ventilated place.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) May displace oxygen and cause rapid suffocation.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Propane	74-98-6	87.5-100
Ethane	74-84-0	0-7
Propylene	115-07-1	0-5
Butane	106-97-8	0-2.5

Additives

Chemical name	CAS number	%
Ethyl Mercaptan	75-08-1	<0.005

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Skin contact Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100 F/38 C and 110 F/43 C, not exceeding 112 F/44 C). Keep immersed for 20 to 40 minutes. Seek medical assistance.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion Ingestion is not a typical route of exposure for gases or liquefied gases.

Most important symptoms/effects, acute and delayed Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Dry chemical, CO2, water spray, fog, or foam.

Unsuitable extinguishing media None known.

Specific hazards arising from the chemical Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions Move container from fire area if it can be done without risk.

Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

General fire hazards Extremely flammable gas.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.

Environmental precautions Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

7. Handling and storage

Precautions for safe handling Eliminate all sources of ignition. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities Store in accordance with local, regional, national, and international regulations. Secure cylinders in an upright position at all times, close all valves when not in use. Store in a cool, dry, well-ventilated place. Keep container tightly closed and sealed until ready for use. Protect cylinders from damage.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm
Additives	**Type**	**Value**
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	25 mg/m3 10 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Propylene (CAS 115-07-1)	TWA	500 ppm
Additives	**Type**	**Value**
Ethyl Mercaptan (CAS 75-08-1)	TWA	0.5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm
Additives	**Type**	**Value**
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	1.3 mg/m3 0.5 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Provide adequate ventilation and minimize the risk of inhalation of gas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety glasses or goggles.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear protective clothing appropriate for the risk of exposure.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance Colorless gas.

Physical state Gas.

Form Compressed liquefied gas.

Color Colorless.

Odor Rotten egg.

Odor threshold	Not available.
pH	Not applicable.
Melting point/freezing point	-306.4 °F (-188 °C)
Initial boiling point and boiling range	-43.6 °F (-42 °C) 14.7 psia
Flash point	-155.2 °F (-104.0 °C)
Evaporation rate	Not applicable.
Flammability (solid, gas)	Extremely flammable gas.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	2.15 %
Explosive limit - upper (%)	9.6 %
Vapor pressure	127 psig (21°C / 70°F)
Vapor density	Not available.
Relative density	0.504 (liquid) 1.5 (vapor) (air=1) @ 15°C / 60°F
Solubility(ies)	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	1.77
Auto-ignition temperature	809.6 °F (432 °C)
Decomposition temperature	Not available.
Viscosity	Not applicable.
Other information	
Molecular weight	45 g/mol
Percent volatile	100 %

10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Strong acids. Halogens.
Hazardous decomposition products	Carbon oxides. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Not likely, due to the form of the product.
Inhalation	High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Contact with liquefied gas may cause frostbite.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

Information on toxicological effects

Acute toxicity	High concentration: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.

Components	Species	Test Results
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Propane (CAS 74-98-6)		
Acute		
Inhalation		
LC50	Rat	> 1442 mg/l, 15 Minutes
Propylene (CAS 115-07-1)		
Acute		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours

Additives	Species	Test Results
Ethyl Mercaptan (CAS 75-08-1)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
Inhalation		
LC50	Mouse	4420 mg/l, 4 Hours
Oral		
LD50	Rat	682 mg/kg

Skin corrosion/irritation Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

Serious eye damage/eye irritation Direct contact with liquefied gas may cause eye damage from frostbite.

Respiratory or skin sensitization

Respiratory sensitization Not classified.

Skin sensitization Not classified.

Germ cell mutagenicity Not classified.

Carcinogenicity Not classified.

IARC Monographs. Overall Evaluation of Carcinogenicity

Propylene (CAS 115-07-1)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity Not classified.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not classified.

12. Ecological information

Ecotoxicity Not expected to be harmful to aquatic organisms.

Persistence and degradability The product is readily biodegradable.

Bioaccumulative potential The product is not expected to bioaccumulate.

Partition coefficient n-octanol / water (log Kow)

Propane (CAS Mixture)	1.77
Butane (CAS 106-97-8)	2.89
Propane (CAS 74-98-6)	2.36
Propylene (CAS 115-07-1)	1.77

Mobility in soil May evaporate quickly.

Mobility in general May evaporate quickly.

Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F
Waste from residues / unused products	Dispose in accordance with all applicable regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1075
UN proper shipping name	Propane
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	19, T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Propane
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	No
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1075
UN proper shipping name	PROPANE
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	This product is a compressed or liquefied gas and when transported in bulk is covered under IGC code.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8)	LISTED
Ethyl Mercaptan (CAS 75-08-1)	LISTED
Propane (CAS 74-98-6)	LISTED
Propylene (CAS 115-07-1)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Propylene	115-07-1	0-5

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130) Hazardous substance

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. Rhode Island RTK

Butane (CAS 106-97-8)
Ethyl Mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

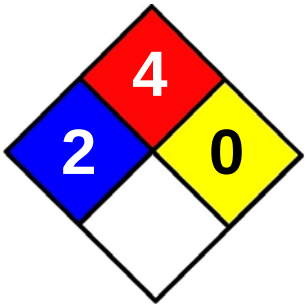
16. Other information, including date of preparation or last revision

Issue date 05-May-2014

Revision date 11-September-2014

Version # 02

NFPA Ratings



Disclaimer All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

ANSUL

MATERIAL SAFETY DATA SHEET

PRX

Product Code: 1070-2-003 ANa

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	PRX
Version #	01
Revision date	01-08-2014
CAS #	Mixture
Product Code	1070-2-003 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING! Causes skin and eye irritation.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Do not get this material in contact with eyes.
Skin	Avoid contact with the skin. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Inhalation	Do not breathe vapor. May be irritating.
Ingestion	Not a likely route of entry. Do not ingest.
Target organs	Eyes. RESPIRATORY SYSTEM. Skin. Central nervous system.
Chronic effects	Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Signs and symptoms	Irritation of nose and throat. Irritation of eyes and mucous membranes. Defatting of the skin. Rash. Skin irritation.

3. Composition / Information on Ingredients

Components	CAS #	Percent
SODIUM PHOSPHATE, DIBASIC	7558-79-4	1 - 2.5
Sodium sulphate	7757-82-6	2.5 - 10
Other components below reportable levels		> 90

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Specific methods	None known.
Hazardous combustion products	May include oxides of nitrogen.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.
Storage	Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Personal protective equipment	
Eye / face protection	Do not get in eyes. Wear approved chemical safety glasses or goggles where eye exposure is reasonably probable.
Skin protection	Wear appropriate chemical resistant clothing. Chemical resistant gloves.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	Avoid contact with skin. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Clear. Pink.
Odor	Odorless.
Physical state	Liquid.
pH	8.3 - 9.3
Melting point	Not available.
Freezing point	Not available.

Boiling point	> 212 °F (> 100 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.18
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Alkaline metals. Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components	Test Results
SODIUM PHOSPHATE, DIBASIC (7558-79-4)	Acute Oral LD50 Rat: 17000 mg/kg
Sodium sulphate (7757-82-6)	Acute Other LD50 Rabbit: > 4 g/kg

Local effects	Irritating to eyes. Irritating to skin.
Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Sodium sulphate (7757-82-6)	EC50 Water flea (Ceriodaphnia dubia): 2807 - 3535 mg/l 48.00 hours LC50 Striped bass (Morone saxatilis): 56 mg/l 96.00 hours

Ecotoxicity	Not expected to be harmful to aquatic organisms.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA (Superfund) reportable quantity

SODIUM PHOSPHATE, DIBASIC: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Acute Health - No
Chronic Health - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely *hazardous* substance

No

Section 311 hazardous chemical

No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

SODIUM PHOSPHATE, DIBASIC (CAS 7558-79-4)	Listed.
Sodium sulphate (CAS 7757-82-6)	Listed.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

01-08-2014

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name:	PTOUCH 2X +SSPR 6PK FLAT GRAY PRIMER	Revision Date:	06/15/2011
Identification Number:	249088		
Product Use/Class:	Primer/Aerosol		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Acetone	67-64-1	30.0	500 ppm	750 ppm	1000 ppm	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	10.0	10 mg/m3	N.E.	15 mg/m3 (Total Dust)	N.E.
Mineral Spirits	64742-88-7	10.0	100 ppm	N.E.	100 ppm	N.E.
Allphatic Hydrocarbon	64742-89-8	5.0	100 ppm	N.E.	100 ppm	N.E.
Xylene	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Naphtha	8032-32-4	5.0	N.E.	N.E.	N.E.	N.E.
Magnesium Silicate	14807-96-6	5.0	2 mg/m3	N.E.	0.1 mg/m3 (Respirable)	N.E.
Ethylbenzene	100-41-4	5.0	100 ppm	125 ppm	100 ppm	N.E.
Carbon Black	1333-86-4	1.0	3.5 mg/m3	N.E.	3.5 mg/m3	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Harmful if swallowed. Extremely flammable liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.
May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage.

Contains carbon black. Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats experimentally exposed for long periods of time to excessive concentrations of carbon black and several insoluble fine dust particles. Tumors have not been observed in other animal species (i.e., mouse and hamster) under similar circumstances and study conditions. Epidemiological studies of North American workers show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black.

Carbon black is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC and is proposed to be listed as A4- "not classified as a human carcinogen" by the American Conference of Governmental Industrial Hygienists. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of carbon black in the formula.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

Unusual Fire And Explosion Hazards: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Isolate from heat, electrical equipment, sparks and open flame. Keep containers tightly closed. Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust.

Section 7 - Handling And Storage

Handling: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Use only in a well-ventilated area. Avoid breathing vapor or mist. Wash thoroughly after handling. Wash hands before eating.

Storage: Contents under pressure. Do not expose to heat or store above 120 ° F. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is *any potential for* an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.775	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid all possible sources of ignition. Avoid temperatures above 120 ° F.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Liquefied Petroleum Gas	N.E.	N.E.
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Mineral Spirits	>5000 mg/kg (Rat, Oral)	>1400 ppm (Rat, Inhalation, 4Hr)
Aliphatic Hydrocarbon	>5000 mg/kg (Rat, Oral)	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
Naphtha	>5000 mg/kg (Rat, Oral)	N.E.
Magnesium Silicate	N.E.	TCLo: 11 mg/m3 (Inhalation)
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Carbon Black	>8000 mg/kg (Rat, Oral)	N.E.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Ethylbenzene	100-41-4

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Modified Alkyd	PROPRIETARY

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Modified Alkyd	PROPRIETARY

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2* Flammability: 4 Reactivity: 0 Personal Protection: X

NFPA Ratings:

Health: 2 Flammability: 4 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 533

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name: PTOUCH 2X SSPR 6PK FLAT WHITE Revision Date: 01/13/2009

Identification Number: 249126

Product Use/Class: Topcoat/Aerosol

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Preparer: Regulatory Department

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Liquefied Petroleum Gas	68476-86-8	35.0	1000 ppm	N.E.	1000 ppm	N.E.
Acetone	67-64-1	25.0	500 ppm	750 ppm	750 ppm	N.E.
Titanium Dioxide	13463-67-7	10.0	10 mg/m3	N.E.	10 mg/m3	N.E.
Mineral Spirits	64742-88-7	10.0	100 ppm	N.E.	100 ppm	N.E.
Naphtha	8032-32-4	5.0	300 ppm	N.E.	N.E.	N.E.
Magnesium Silicate	14807-96-6	5.0	10 mg/m3	N.E.	15 mg/m3	N.E.
Xylene	1330-20-7	5.0	100 ppm	150 ppm	100 ppm	N.E.
Toluene	108-88-3	5.0	50 ppm	150 ppm	200 ppm	300 ppm
Ethylbenzene	100-41-4	5.0	100 ppm	125 ppm	100 ppm	N.E.
Calcined Aluminum Silicate	1332-58-7	5.0	2 mg/m3	N.E.	5 mg/m3	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contains Aromatic Distillate, which may cause cancer. Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing vapors or mists.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC.

Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.

May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. Overexposure to toluene in laboratory animals has been associated with liver abnormalities, kidney, lung and spleen damage. Effects in humans have included liver and cardiac abnormalities.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F
(Setaflash)

LOWER EXPLOSIVE LIMIT: 0.7 %
UPPER EXPLOSIVE LIMIT : 12.8 %

Extinguishing Media: Alcohol, Carbon Dioxide, Dry Chemical, Foam, Water Fog

Unusual Fire And Explosion Hazards: Water spray may be ineffective. FLASH POINT IS LESS THAN 20 °. F. = EXTREMELY FLAMMABLE LIQUID AND VAPOR! Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist. Wash thoroughly after handling. Use only in a well-ventilated area. Wash hands before eating.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Boiling Range:	-34 - 415 F	Vapor Density:	Heavier than Air
Odor:	Solvent Like	Odor Threshold:	N.E.
Appearance:	Liquid	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight		
Freeze Point:	N.D.	Specific Gravity:	0.786
Vapor Pressure:	N.D.	PH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open

flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Product LD50: N.D.

Product LC50: N.D.

Chemical Name	LD50	LC50
Liquefied Petroleum Gas	N.E.	N.E.
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Mineral Spirits	>8 mg/kg (Rat, Oral)	>1400 ppm (Rat, Inhalation, 4Hr)
Naphtha	>5000 mg/kg (Rat, Oral)	N.E.
Magnesium Silicate	N.E.	TCLo: 11 mg/m3 (Inhalation)
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
Toluene	636 mg/kg (Rat, Oral)	49 g/m3 (Rat, Inhalation)
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Calcined Aluminum Silicate	5000 mg/kg (ORAL RAT)	N.D.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

DOT Proper Shipping Name:	Aerosols	Packing Group:	N.A.
DOT Technical Name:	N.A.	Hazard Subclass:	N.A.
DOT Hazard Class:	2.1	Resp. Guide Page:	126
DOT UN/NA Number:	UN1950		

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Toluene	108-88-3
Ethylbenzene	100-41-4

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Modified Alkyd	PROPRIETARY

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Modified Alkyd	PROPRIETARY
Calcium Carbonate	1317-65-3

California Proposition 65:

WARNING! This product contains a chemical(s) known by the State of California to cause cancer.

WARNING! This product contains a chemical(s) known to the state of California to cause birth defects or other reproductive harm.

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2* Flammability: 4 Reactivity: 0 Personal Protection: X

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

The information contained on this MSDS has been checked and should be accurate. However, it is the responsibility of the user to comply with all Federal, State, and Local laws and regulations.

MATERIAL SAFETY DATA SHEET

Section 1. Chemical product and company identification

Product Name:	Purple K Dry Chemical Fire Extinguishant
Synonym:	Potassium Bicarbonate, KDC, PK
Manufacturer:	AMEREX CORPORATION
Internet Address:	www.amerex-fire.com
Address:	7595 Gadsden Highway P.O. Box 81 Trussville, AL 35173-0081
Telephone:	(205) 655-3271
Emergency Contacts:	Chemtrec 1(800) 424-9300 or (703) 527–3887
Revised:	April, 2013

Section 2. Hazard identification and emergency overview

Emergency overview: Light purple, fine solid powder, odorless.

Adverse health effects and symptoms: Moderate irritant to the respiratory system and eyes; mild irritant to the skin. Symptoms may include coughing, shortness of breath, and irritation of the lungs, eyes, and skin. Ingestion, although unlikely, may cause gastric distress.

Exposure guidelines:

Ingredients	OSHA PEL	ACGIH TLV	DFG MAK *
Potassium bicarbonate	PNOC** Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	PNOC Total dust, 4 mg/m^3 Respirable fraction, 1.5 mg/m^3
Mica	6 mg/m^3	3 mg/m3	------
Fullers Earth	PNOC Total dust, 15 mg/m^3 Respirable fraction, 5 mg/m^3	PNOC Total dust, 10 mg/m^3 Respirable fraction, 3 mg/m^3	PNOC Total dust, 4 mg/m^3 Respirable fraction, 1.5 mg/m^3
Silicone oil	NR***	NR	NR
Violet 23 pigment	NR	NR	NR

*German regulatory limits **PNOC = Particulates not otherwise classified (ACGIH) also known as Particulates not otherwise regulated (OSHA) *** NR = Not Regulated. All values are 8 hour time weighted average concentrations.

Hazard symbols: WHMIS (Canadian workplace hazardous materials identification system)

D2B may irritate eyes, mucous membranes, or skin

Section 3. Composition/information on ingredients

Name/Compound	Weight %	CAS #
Potassium bicarbonate (potassium hydrogen carbonate)- may contain minor calcium carbonate	>93	298-14-6
Fullers earth magnesium aluminum silicate-	>4	8031-18-3
Mica potassium aluminum silicate	>2	12001-26-2
Silicone oil methyl hydrogen polysiloxane	< 0.5	63148-57-2
Violet 23 pigment oxazine dye	< 0.2	6358-30-1

Section 4. First Aid Measures

Eye Exposure: Irrigate eyes with water and repeat until pain free. Seek medical attention if irritation develops, or if vision changes occur.

Skin Exposure: In case of contact, wash with plenty of soap and water. Seek medical attention if irritation develops.

Inhalation: If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if irritation persists.

Ingestion: If victim is conscious and alert, give 2-3 glasses of water to drink. If conscious, induce vomiting. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist.

Medical conditions possibly aggravated by exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema, or bronchitis. Skin contact may aggravate existing skin disease. Chronic overexposure may cause pneumoconiosis ("dusty lung" disease).

Section 5. Fire fighting measures

Extinguishing media: non combustible and non flammable – product is an extinguishing agent

Unusual fire/explosion hazards: in a fire this material may decompose, releasing oxides of carbon, potassium and nitrogen (see Section 10).

Insensitive to mechanical impact or static discharge.

HMIS Hazard Ranking:
health = 1, flammability = 0, reactivity = 0, personal protective equipment: use N-95 dust mask (see Section 8)

Section 6. Accidental release measures

Clean up released material using vacuum or wet sweep and shovel to minimize generation of dust. Wear appropriate respiratory protection. Bag and drum for disposal. If product is used and/or contaminated, use PPE and containment appropriate to the nature of the mixture. Prevent material from entering waterways.

Section 7. Handling and storage

Avoid skin, eye, or respiratory exposure. Use appropriate PPE when handling or maintaining equipment, and wash thoroughly after handling (see Section 8).

Keep product in original container or extinguisher. Contents may be under pressure – inspect for extinguisher rust periodically to insure container integrity. Do not mix with other extinguishing agents, particularly ammonium phosphate. Do not store in high humidity.

Section 8. Exposure controls/ personal protection

During the application of this product against fires, exhaust gases and the products of incomplete combustion (PICs) are the principal respiratory hazards. In the manufacture of extinguishers, automated systems and point source ventilation controls sufficiently minimize respiratory exposure. Employers and employees must use their collective judgment in determining occupational settings where the use of a dust mask or air purifying respirator is prudent. The need for respiratory protection is not likely for short-term use in well ventilated areas.

Respiratory protection: use N95 dust mask for limited exposure, use air-purifying respirator (APR) with high efficiency particulate air (HEPA) filters for prolonged exposure.

Eye protection: wear chemical goggles or full-face APR.

Skin protection: use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Wash thoroughly after handling.

Section 9. Physical and chemical properties

Appearance: light purple powder, finely divided odorless solid.
Specific gravity: Approximately .88 in aerated condition
Solubility: product is coated, not immediately soluble in water
Non –flammable
Flash point: none
Vapor pressure: < 1 mm Hg
pH: approximately 9 – 10 for a 10% solution
Boiling point: not applicable
No explosive or oxidizing properties

Section 10. Stability and reactivity

Stability: stable

Incompatibles: strong acids, ammonium phosphate, lithium.

Decomposition products: heat of fire may release carbon monoxide, carbon dioxide, and oxides of potassium and nitrogen.

Possibility of hazardous reactions: none

Section 11. Toxicological information

Acute toxicity: Potassium bicarbonate LD_{50} (rat): unknown, testing has not been conducted. Relatively non-toxic.
Target organs in man: respiratory system. This product is a mild irritant to epithelial tissue, (eyes, mucous membranes, skin) and may aggravate dermatitis. No information was found indicating the product causes sensitization.

Chronic toxicity: Pneumoconiosis, or "dusty lung" disease, may result from chronic exposure to any dust.

Reproductive toxicity: This product's ingredients are not known to have reproductive or teratogenic effects.

Section 12. Ecological Information (potassium bicarbonate)

Environmental and biodegradation. Ready biodegradability prediction: yes

Solubility - 0.75^{6} @ 25°C

Probability of rapid biodegradation:

0.718 (linear model) 0.894 (non-linear model)

Anaerobic biodegradation probability: 0.836 (linear model)

Bioaccumulation est. - biotransformation half-life: 0.012 days

Ecotoxic effects - Product is relatively non-toxic.

Rainbow Trout: LC_{50} - 1300 mg/L (96 hr)

Fathead Minnow: minimum dose, mortality - 260 mg/L

Water flea (*Daphnia magna*): LC_{50} - 670 mg/L (24 hr), minimum dose, mortality - 94 mg/L

Algae: no active toxicity with aquatic plants

Behavior in environmental compartments.

Biota: log K_{ow} -4.01, does not accumulate in fat tissue

Soil: soil adsorption coefficient, K_{oc} 0.009, log K_{oc} -2.06

Water: volatilization rates - river: 4.97^{10} days, lake: 5.42^{11} days

Air: particle/gas partition coefficient, K_p 0.0974 (Mackay Model)

Fraction sorbed to airborne particulates: 0.886

Atmospheric oxidation half-life: 20.6 days

Level III fugacity model: 62% soil, 37% water, <0.1% sediment, air

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Section 13. Disposal considerations

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal laws or regulations. Used product may be altered or contaminated, creating different disposal considerations.

Section 14. Transportation information

This product is not defined as a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 172, or by Transport Canada "Transportation of Dangerous Goods" regulations.

When shipped in a stored pressure type fire extinguisher, and pressurized with a non-flammable, non-toxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1044. The DOT hazard class/ division is 2.2 Non-Flammable Gas. Packing Group – N/A.

Section 15. Regulatory information

International Inventory Status:

All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America	TSCA	Yes
Canada	DSL	Yes
Europe	EINECS/ELINCS	Yes
Australia	AICS	Yes
Japan	MITI	Yes
South Korea	KECL	Yes

European Risk and Safety phrases:

EU Classification:	Irritant	
R Phrases:	20	Harmful by inhalation.
	36/37	Irritating to eyes, respiratory system.
S Phrases:	22	Do not breathe dust.
	24/25	Avoid contact with skin and eyes
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	36	Wear suitable protective clothing.

U.S. federal regulatory information:

None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs), or are regulated under TSCA 8(d).

State regulatory information:

Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None
California – Permissible Exposure Limits for Chemical Contaminants: None
Florida – Substance List: Mica Dust
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: Mica Dust
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: None
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: Mica Dust
T
exas – Hazardous Substance List: No
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65: No component is listed on the California Proposition 65 list.

Section 16. Other information

This MSDS conforms to requirements under U.S., U.K., Canadian, Australian, and EU regulations or standards, and conforms to the proposed 2003 ANSI Z400.1 format.

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by Lindsay R. Hill, CIH

A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Purple K Dry Chemical (Fire Extinguishing Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Purple K Dry Chemical (Fire Extinguishing Agent)
Other Trade Names	Potassium Bicarbonate, PK,PKP
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
See Section 11 - Toxicity

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Bicarbonate	298-14-6 EC#2060590	75 - 90%	None	None
Calcium Carbonate	471-34-1 EC#2074399	5 - 15%	None	None
Mica	12001-26-2	2 - 6%	None	None
Clay	8031-18-3	1 - 5%	None	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<1%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica
Calcium Carbonate
OSHA PEL: 15 mg/m^3 TWA, total dust
5 mg/m^3 TWA ,respirable fraction
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Powder
Color	Purple
Odor	Odorless
Specific Gravity	Not available
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.
Conditions to Avoid
Heat - High temperatures - Exposure to direct sunlight
Materials to Avoid
Strong oxidizing agents - strong acids - NaK alloy - $NH_4H_2PO_4$

10. STABILITY AND REACTIVITY

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
Oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Calcium carbonate, mica, and clay may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

14. TRANSPORT INFORMATION

NOTE: For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at www.badgerfire.com.

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0% - Calcium Carbonate (471-34-1) 5-15%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2)1-4%-Amorphous Silica (7631-86-9)0.2-1.0%-Calcium Carbonate (471-34-1)5-15%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0%

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

15. REGULATORY INFORMATION

SARA Title III Sect. 302 (EHS)
This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Badger Fire Protection assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

MATERIAL SAFETY DATA SHEET

Purple K Dry Chemical (Fire Extinguishing Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Purple K Dry Chemical (Fire Extinguishing Agent)
Other Trade Names	Potassium Bicarbonate, PK,PKP
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Kidde – Residential and Commercial
Address	1016 Corporate Park Drive Mebane, NC 27302 USA
Phone Number	(919) 563-5911 (919) 304-8200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
See Section 11 - Toxicity

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Bicarbonate	298-14-6 EC#2060590	75 - 90%	None	None
Calcium Carbonate	471-34-1 EC#2074399	5 - 15%	None	None
Mica	12001-26-2	2 - 6%	None	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Clay	8031-18-3	1 - 5%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None
Dye	NA	<1%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica
Calcium Carbonate
OSHA PEL: 15 mg/m^3 TWA, total dust
5 mg/m^3 TWA ,respirable fraction
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Powder
Color	Purple
Odor	Odorless
Specific Gravity	Not available
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	Not applicable
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
- Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid
- Strong oxidizing agents - strong acids - NaK alloy - NH4H2PO4

10. STABILITY AND REACTIVITY

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
- oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Calcium carbonate, mica, and clay may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

14. TRANSPORT INFORMATION

NOTE: For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at www.badgerfire.com.

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EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0% - Calcium Carbonate (471-34-1) 5-15%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2)1-4%-Amorphous Silica (7631-86-9)0.2-1.0%-Calcium Carbonate (471-34-1)5-15%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) 0.2 -1.0%

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

15. REGULATORY INFORMATION

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Kidde – Residential and Commercial assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

ANSUL

MATERIAL SAFETY DATA SHEET

PURPLE-K

Product Code: 2011-2-005 ANa | Issue Date: 12-12-2013

1. Product and Company Identification

Material name	PURPLE-K
Version #	01
Revision date	12-12-2013
CAS #	Mixture
Product Code	2011-2-005 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-735-7411
Internet	http://www.ansul.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	WARNING Irritating to eyes and skin.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Avoid contact with eyes. Contact with eyes may cause irritation.
Skin	Avoid contact with the skin. May cause skin irritation.
Inhalation	Inhalation of dusts may cause respiratory irritation.
Ingestion	Not a likely route of entry.
Target organs	Eyes. Respiratory system. Skin.
Signs and symptoms	Irritation of eyes and mucous membranes.

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
MICA	12001-26-2	2.5 - 10
Non-hazardous components	**CAS #**	**Percent**
Silicone fluid	63148-57-2	0.1 - 1
Purple Pigment	68647-14-3	1 - 2.5
FULLERS EARTH	8031-18-3	2.5 - 10
POTASSIUM BICARBONATE	298-14-6	90 - 100

4. First Aid Measures

First aid procedures	
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. Get medical attention, if needed.

Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Hazardous combustion products	Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions	Local authorities should be advised if significant spillages cannot be contained. Avoid inhalation of dust from the spilled material. Wear a dust mask if dust is generated above exposure limits.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Avoid dust formation. Following product recovery, flush area with water.
Other information	Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling	Keep formation of airborne dusts to a minimum. Do not breathe dust. Avoid contact with eyes. Do not use in areas without adequate ventilation. Wear personal protective equipment. Wash thoroughly after handling.
Storage	Store in a well-ventilated place. Keep container tightly closed. Guard against dust accumulation of this material. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Occupational exposure limits

ACGIH

Components	Type	Value	Form
MICA (12001-26-2)	TWA	3.0000 mg/m3	Respirable fraction.

U.S. - OSHA

Components	Type	Value	Form
MICA (12001-26-2)	TWA	3.0000 mg/m3 20.0000 mppcf	Respirable dust.

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Do not get in eyes. Chemical goggles are recommended.
Skin protection	No special protective equipment required.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
General hygiene considerations	Do not get in eyes.

9. Physical & Chemical Properties

Appearance	
Form	Powder.
Color	Violet.
Odor	Odorless.
Physical state	Solid.
pH	Not available.
Melting point	Not available.
Freezing point	Not available.
Boiling point	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	Not available.
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Incompatible materials	Strong acids.
Hazardous decomposition products	Carbon oxides.

11. Toxicological Information

Toxicological information	The toxicity of this product has not been tested.
Chronic effects	Prolonged inhalation may be harmful.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Ecotoxicity	This product has no known eco-toxicological effects.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Acute Health - No
Chronic Health - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance

No

Section 311 hazardous chemical

No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

MICA (CAS 12001-26-2) Listed.

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings

Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings

Health: 1
Flammability: 0
Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date

12-12-2013

ISO 9001

Industrial de Fosfatos, S. A. de C. V.

Av. División del Golfo 3308
87019 Cd. Victoria, Tamps. México
e-mail: ifsa@pyro-chem.com

MATERIAL SAFETY DATA SHEET
PK DRY CHEMICAL POWDER – POLVO QUÍMICO SECO PK

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name / Label Name:	PYRO-CHEM PURPLE K
CAS Number:	N/A
Chemical Name / Family	N/A It is a mixture
Synonyms:	PK Fire extinguishing powder PK Dry chemical powder
Manufacturer's Name:	INDUSTRIAL DE FOSFATOS, S. A. DE C. V.
Address:	Av. División del Golfo 3308 Nte. 87019 Cd. Victoria, Tamaulipas, MÉXICO
Emergency telephone number:	CHEMTREC 1-800-424-9300
Business phone / Fax:	+52 (1) 313-03-03 / +52 (1) 313-03-01
Date of preparation:	September 27, aa

SECTION 2 – COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS N°	% w/w	OSHA PEL mg/m³	ACGIH TLV mg/m³	TOXICITY DATA
Potassium bicarbonate	298-14-8	78 – 95	NONE	15	NONE
Calcium carbonate	471-34-1	0 – 15	NONE	NONE	NONE
Mica	12001-26-2	1 – 4	5	10	NONE
Attapulgus clay	8031-18-3	1 – 4	NONE	NONE	NONE
Amorphous silica	7631-86-9	0.2 – 1.0	6	10	NONE
Methyl Hydrogen Polysiloxane	68037-59-2	0.3 – 1.5	NONE	NONE	NONE

SECTION 3 – PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling point, °C:	N/A	**Specific gravity (H_2O=1)**	ABOUT 2.2	**Viscosity @ 20°C:**	N/A
Vapor pressure, mm Hg:	N/A	**Percent volatile by volume:**	N/A	**Melting point, °C:**	NDA
Vapor density (Air=1):	N/A	**Evaporation rate (Butyl acetate=1)**	N/A	**Solubility in water:**	NDA
Reactivity in water:	Unreactive	**Appearance and odor:**	Odorless, purple colored fine powder		

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash point:	N/A	**Flammable limits in air, % by volume**	N/A	**Auto-ignition temperature:**	N/A
Extinguishing media:	N/A – The product is a fire extinguishing agent				
Unusual fire and explosion hazards:	NONE				
Special fire fighting procedures:	The material is a fire extinguishing agent and will not burn. However, if other materials are involved, use standard chemical fire fighting procedures and consider the hazards of those materials. In enclosed areas, fire fighters must wear self-contained breathing apparatus and full protective equipment.				

SECTION 5 – REACTIVITY DATA

Stability:	Stable	**Conditions to avoid:**	Extreme heat	**Hazardous polymerization:**	Will not occur
Incompatibility (materials to avoid):	Strong acids. Do not mix with ABC type dry chemical extinguishing agents.				
Hazardous decomposition products:	Carbon dioxide.				

SECTION 6 – HEALTH HAZARD DATA

Threshold limit value:	ACGIH TLV for particulates not otherwise classified: 10 mg/m^3 OSHA PEL for nuisance dust limit total: 15 mg/m^3
Routes of entry:	**Inhalation:** YES; may be irritant to the respiratory tract. **Eye contact:** YES; mildly irritant for a short period. **Skin contact:** YES; may be mildly irritating. **Ingestion:** NOT an expected route of entry.
Signs and symptoms of overexposure:	**Acute:** Transient cough, shortness of breath, irritation of airways. **Chronic:** This product is not known to cause chronic illness.
Medical conditions generally aggravated by exposure:	Asthma, emphysema, bronchitis or other respiratory illness.
Chemical listed as carcinogen or potential:	NTP program: No IARC monographs: No OSHA: No
Emergency and first aid procedures:	**Eye contact:** Flush with large amounts of water for at least 15 minutes. If irritation persists, seek medical attention. **Skin contact:** Wash with soap and water. If irritation persists, seek medical attention. **Inhalation:** Move victim to fresh air. Seek medical attention if discomfort continues. **Ingestion:** Rinse mouth, drink large amounts of water and induce vomiting. Seek medical help.

SECTION 7 – SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

Precautions to be taken in handling and storage:	Should be stored in original containers. Store in dry, cool, well-ventilated place away from acidic compounds. Wash after handling. Do not cut, grind, weld or drill on or near product containers. Treat empty containers as if they were full.
Other precautions:	Do not mix with acidic materials.
Steps to be taken in case materials is released or spilled:	Sweep up or vacuum. Store in covered containers. Do not reuse. In case of large spills, use rubber gloves, chemically resistant suit and boots, hard hat and air purifying respirator.
Waste disposal method:	Dispose of in compliance with local, state and federal regulations. Components are non hazardous, sanitary landfill disposal may be acceptable

SECTION 8 – SPECIAL PROTECTION INFORMATION	
Respiratory protection:	Dust mask where dustiness is prevalent or TLV exceeded. Mechanical filter respirator if exposure is prolonged.
Ventilation:	Use adequate ventilation. Use fan or vent to outside.
Protective gloves:	Wear rubber gloves for routine industrial use.
Eye protection:	Recommended as mechanical barrier for prolonged exposure. Safety glasses or chemical type goggles.
Other protective equipment:	If irritation occurs, long sleeves and impervious gloves should be worn.
Work / Hygienic practices:	Use good personal hygiene and good housekeeping practices. Avoid breathing of dust. Wash with soap and water.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS		
HEALTH: 1	**FLAMMABILITY: 0**	**REACTIVITY: 0**

HAZARD INDEX:
0 Minimal hazard
1 Slight hazard
2 Moderate hazard
3 Serious hazard
4 Sever hazard

GENERAL KEYS:
N/A: Not applicable.
NDA: No data available.

Industrial de Fosfatos, S. A. de C. V.

Av. División del Golfo 3308
87019 Cd. Victoria, Tamps. México
e-mail: ifsa@pyro-chem.com

MATERIAL SAFETY DATA SHEET
BCS DRY CHEMICAL POWDER – POLVO QUÍMICO SECO BCS

SECTION 1 – CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name / Label Name:	PYRO-CHEM REGULAR SILICONIZED BCS
CAS Number:	N/A
Chemical Name / Family	N/A It is a mixture
Synonyms:	BCS Fire extinguishing powder BCS Dry chemical powder
Manufacturer's Name:	INDUSTRIAL DE FOSFATOS, S. A. DE C. V.
Address:	Av. División del Golfo 3308 Nte. 87019 Cd. Victoria, Tamaulipas, MÉXICO
Emergency telephone number:	CHEMTREC 1-800-424-9300
Business phone / Fax:	+52 (1) 313-03-03 / +52 (1) 313-03-01
Date of preparation:	March 24, 2000

SECTION 2 – COMPOSITION AND INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS N°	% w/w	OSHA PEL mg/m³	ACGIH TLV mg/m³	TOXICITY DATA
Sodium bicarbonate	144-55-8	80 – 97	NONE	15	NONE
Calcium carbonate	471-34-1	0 – 10	NONE	NONE	NONE
Mica	12001-26-2	0 - 3	5	10	NONE
Attapulgus clay	8031-18-3	1 – 4	NONE	NONE	NONE
Amorphous silica	7631-86-9	0.2 – 1.0	6	10	NONE
Methyl Hydrogen Polysiloxane	68037-59-2	0.3 – 1.5	NONE	NONE	NONE

SECTION 3 – PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling point, °C:	N/A	**Specific gravity (H_2O=1)**	ABOUT 2.2	**Viscosity @ 20°C:**	N/A
Vapor pressure, mm Hg:	N/A	**Percent volatile by volume:**	N/A	**Melting point, °C:**	270
Vapor density (Air=1):	N/A	**Evaporation rate (Butyl acetate=1)**	N/A	**Solubility in water:**	16.4 g/100g
Reactivity in water:	Unreactive	**Appearance and odor:**	Odorless, fine white powder (color may vary)		

SECTION 4 – FIRE AND EXPLOSION HAZARD DATA

Flash point:	N/A	**Flammable limits in air, % by volume**	N/A	**Auto-ignition temperature:**	N/A
Extinguishing media:	N/A -- The product is a fire extinguishing agent				
Unusual fire and explosion hazards:	NONE				
Special fire fighting procedures:	The material is a fire extinguishing agent and will not burn. However, if other materials are involved, use standard chemical fire fighting procedures and consider the hazards of those materials. In enclosed areas, fire fighters must wear self-contained breathing apparatus and full protective equipment.				

SECTION 5 – REACTIVITY DATA

Stability:	Stable	**Conditions to avoid:**	Extreme heat	**Hazardous polymerization:**	Will not occur
Incompatibility (materials to avoid):	Strong acids. Do not mix with ABC type dry chemical extinguishing agents.				
Hazardous decomposition products:	Carbon dioxide.				

SECTION 6 – HEALTH HAZARD DATA

Threshold limit value:	ACGIH TLV for particulates not otherwise classified: 10 mg/m^3 OSHA PEL for nuisance dust limit total: 15 mg/m^3
Routes of entry:	**Inhalation:** YES; may be irritant to the respiratory tract. **Eye contact:** YES; mildly irritant for a short period. **Skin contact:** YES; may be mildly irritating. **Ingestion:** NOT an expected route of entry.
Signs and symptoms of overexposure:	**Acute:** Transient cough, shortness of breath, irritation of airways. **Chronic:** This product is not known to cause chronic illness.
Medical conditions generally aggravated by exposure:	Asthma, emphysema, bronchitis or other respiratory illness.
Chemical listed as carcinogen or potential:	NTP program: No IARC monographs: No OSHA: No
Emergency and first aid procedures:	**Eye contact:** Flush with large amounts of water for at least 15 minutes. If irritation persists, seek medical attention. **Skin contact:** Wash with soap and water. If irritation persists, seek medical attention. **Inhalation:** Move victim to fresh air. Seek medical attention if discomfort continues. **Ingestion:** Rinse mouth, drink large amounts of water and induce vomiting. Seek medical help.

SECTION 7 – SPECIAL PRECAUTIONS AND SPILL / LEAK PROCEDURES

Precautions to be taken in handling and storage:	Should be stored in original containers. Store in dry, cool, well-ventilated place away from acidic compounds. Wash after handling. Do not cut, grind, weld or drill on or near product containers. Treat empty containers as if they were full.
Other precautions:	Do not mix with acidic materials.
Steps to be taken in case materials is released or spilled:	Sweep up or vacuum. Store in covered containers. Do not reuse. In case of large spills, use rubber gloves, chemically resistant suit and boots, hard hat and air purifying respirator.
Waste disposal method:	Dispose of in compliance with local, state and federal regulations. Components are non hazardous, sanitary landfill disposal may be acceptable

SECTION 8 – SPECIAL PROTECTION INFORMATION	
Respiratory protection:	Dust mask where dustiness is prevalent or TLV exceeded. Mechanical filter respirator if exposure is prolonged.
Ventilation:	Use adequate ventilation. Use fan or vent to outside.
Protective gloves:	Wear rubber gloves for routine industrial use.
Eye protection:	Recommended as mechanical barrier for prolonged exposure. Safety glasses or chemical type goggles.
Other protective equipment:	If irritation occurs, long sleeves and impervious gloves should be worn.
Work / Hygienic practices:	Use good personal hygiene and good housekeeping practices. Avoid breathing of dust. Wash with soap and water.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS

HEALTH: 1	**FLAMMABILITY: 0**	**REACTIVITY: 0**

HAZARD INDEX:
0 Minimal hazard
1 Slight hazard
2 Moderate hazard
3 Serious hazard
4 Sever hazard

GENERAL KEYS:

N/A: Not applicable.
NDA: No data available.

The information herein is given in good faith. It is based on available data and is believed to be true and accurate, but no warranty, expressed or implied, is made. Therefore, *INDUSTRIAL DE FOSFATOS, S. A. DE C. V.* assumes NO responsibility for damage or injury from the use of the product described herein.

MATERIAL SAFETY DATA SHEET

PYRO-CHEM Wet Chemical Solution

Product Code: 1070-2-004 ANa

Issue Date: 01-08-2014

1. Product and Company Identification

Material name	PYRO-CHEM Wet Chemical Solution
Version #	01
Revision date	01-08-2014
CAS #	Mixture
Product Code	1070-2-004 ANa
Product use	Fire extinguishing agent
Manufacturer / Importer / Supplier	
Name	Tyco Fire Protection Products
Address	One Stanton Street Marinette, WI 54143-2542
Phone	715-732-3465
Internet	http://www.pyrochem.com
Emergency Phone Number	CHEMTREC 800-424-9300 or 703-527-3887

2. Hazards Identification

Emergency overview	DANGER Corrosive. Causes skin and eye burns.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Eye contact. Skin contact. Inhalation. Ingestion.
Eyes	Do not get this material in contact with eyes. Corrosive to the eyes and may cause severe damage including blindness.
Skin	Harmful if absorbed through skin. Causes chemical burns. Do not get this material in contact with skin.
Inhalation	None known.
Ingestion	Harmful if swallowed. Do not ingest.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Potassium carbonate	584-08-7	40 - 60
Other components below reportable levels		40 - 60

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation persists after washing.
Skin contact	Wash off with warm water and soap. Get medical attention if irritation develops and persists.
Inhalation	Move to fresh air. For breathing difficulties, oxygen may be necessary. Get medical attention, if needed.
Ingestion	Rinse mouth. Do not induce vomiting without advice from poison control center. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties	No unusual fire or explosion hazards noted.
Extinguishing media	
Suitable extinguishing media	This product is not flammable. Use extinguishing agent suitable for type of surrounding fire.
Protection of firefighters	
Specific hazards arising from the chemical	None known.
Specific methods	None known.
Hazardous combustion products	None known.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Surfaces may become slippery after spillage. Keep upwind.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for containment	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Should not be released into the environment. Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Never return spills in original containers for re-use. Following product recovery, flush area with water. Clean surface thoroughly to remove residual contamination.

7. Handling and Storage

Handling	Do not get this material in contact with eyes. Avoid contact with skin. Avoid prolonged exposure. Handle and open container with care.
Storage	Store in cool place. Store in a well-ventilated place. Keep container tightly closed. Keep out of the reach of children. Use care in handling/storage.

8. Exposure Controls / Personal Protection

Engineering controls	Ensure adequate ventilation, especially in confined areas.
Personal protective equipment	
Eye / face protection	Avoid contact with eyes. Chemical goggles are recommended.
Skin protection	Avoid contact with the skin. Wear suitable protective clothing.
Respiratory protection	No personal respiratory protective equipment normally required.
General hygiene considerations	Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	
Form	Liquid.
Color	Clear. Colorless.
Odor	Odorless.
Physical state	Liquid.
pH	11 - 13
Melting point	Not available.
Freezing point	Not available.
Boiling point	230 °F (110 °C)
Flash point	Not available.
Evaporation rate	Not available.

Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Specific gravity	1.4
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
VOC	Not available.

10. Chemical Stability & Reactivity Information

Chemical stability	Material is stable under normal conditions.
Conditions to avoid	None known.
Incompatible materials	Strong acids. Alkaline metals.
Hazardous decomposition products	None known.

11. Toxicological Information

Toxicological information The toxicity of this product has not been tested.

Toxicological data

Components	Test Results
Potassium carbonate (584-08-7)	Acute Oral LD50 Mouse: 2570 mg/kg Acute Oral LD50 Rat: 1870 mg/kg

Local effects	Irritating to eyes. Irritating to skin.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

12. Ecological Information

Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	Not available.

13. Disposal Considerations

Disposal instructions	This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances - Not applicable.

CERCLA (Superfund) reportable quantity

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Acute Health - Yes Chronic Health - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
Section 302 extremely hazardous substance	No
Section 311 hazardous chemical	No

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

16. Other Information

Further information . HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 2
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 2
Flammability: 0
Instability: 0

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Issue date 01-08-2014

MATERIAL SAFETY DATA SHEET

Regular Dry Chemical (Fire Extinguishing Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Regular Dry Chemical (Fire Extinguishing Agent)
Other Trade Names	BC, SDC, Sodium Bicarbonate
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Kidde – Residential and Commercial
Address	1016 Corporate Park Drive Mebane, NC 27302 USA
Phone Number	(919) 563-5911 (919) 304-8200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Powder

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
See Section 11 - Toxicity

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Sodium Bicarbonate	144-55-8 EC#2056338	75 - 90%	None	None
Calcium Carbonate	471-34-1 EC#2074399	10 - 20%	None	None
Mica	12001-26-2	1- 4%	None	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Clay	8031-18-3	<2%	None	None
Amorphous Silica	7631-86-9 EC#2315454	<2%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Sweep up or vacuum. Prevent skin and eye contact. Wear appropriate protective equipment.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Mica
ACGIH TLV: 3 mg/m^3 TWA, measured as respirable fraction of the aerosol.
OSHA PEL: 20 mppcf, <1% crystalline silica
Calcium Carbonate
OSHA PEL: 15 mg/m^3 TWA, total dust
5 mg/m^3 TWA ,respirable fraction
Nuisance Dust Limit
OSHA PEL: 50 mppcf or 15 mg/m^3 TWA, total dust
15 mppcf or 5 mg/m^3 TWA, respirable fraction

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required. Use dust mask where dustiness is prevalent, or TLV is exceeded.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Powder
Color	White
Odor	Odorless
Specific Gravity	Ca. 2.2
Boiling Range/Point (°C/F)	Not applicable
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	16.4g/100g
Vapor Density (Air = 1)	Heavier than air.
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
- Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid
- Strong oxidizing agents - strong acids

10. STABILITY AND REACTIVITY

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
- oxides of carbon

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Calcium carbonate, mica, and clay may contain small quantities of quartz (crystalline silica) as an impurity. Prolonged exposure to respirable crystalline silica dust at concentrations exceeding the occupational exposure limits may increase the risk of developing a disabling lung disease known as silicosis. IARC found limited evidence for pulmonary carcinogenicity of crystalline silica in humans.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

14. TRANSPORT INFORMATION

NOTE: For additional HAZMAT shipping information related to shipping pressurized fire extinguishers, refer to Badger Technical Bulletin #123-1201 available for download at www.badgerfire.com.

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.

This preparation is not classified as dangerous.

R phrases

None

S phrases

None.

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing

This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing

All ingredients in this product have not been verified for listing on the European Inventory of Existing Commercial Chemical Substances (EINECS) or the European List of New Chemical Substances (ELINCS).

DSL/NDSL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law

All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Calcium Carbonate (471-34-1) 10-20%

PA Right To Know Law

This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2% - Calcium Carbonate (471-34-1) 10-20%

NJ Right To Know Law

This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: Mica (12001-26-2) 1-4% - Amorphous Silica (7631-86-9) <2%

California Proposition 65

This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)

This product does not contain any chemicals subject to SARA Title III Section 302.

15. REGULATORY INFORMATION

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

The information contained herein is based on data believed to be accurate. However, no representation, warranty, or guarantee is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for its own particular use. Kidde – Residential and Commercial assumes no responsibility for personal injury or property damage resulting from use, handling or from contact with this product.

MATERIAL SAFETY DATA SHEET

Section 1 – Product & Company Identification

Product Name ..... :	RIDGID Dark Thread Cutting Oil
Product Catalog No. ..... :	41590, 70830, 41610, 41600
Company Name ..... :	Ridge Tool Company
Address ..... :	400 Clark Street
:	Elyria, Ohio 44035-6001
Telephone ..... :	1-800-519-3456 (USA) (8:00 am – 5:00 pm EST, M-F)
Emergency Telephone ..... :	call 9-1-1 or local emergency number
Website ..... :	www.RIDGID.com
Issue Date ..... :	June 13, 2013

Section 2 – Hazards Identification

EMERGENCY OVERVIEW:

This product is a liquid that is insoluble in water. Direct eye contact may cause minor, short term irritation. Short term skin exposure is not expected to be irritating. Inhalation and ingestion are not anticipated routes of exposure during normal conditions of use.

POTENTIAL HEALTH EFFECTS AND SYMPTOMS FROM SHORT TERM / ACUTE EXPOSURE:

- Eye
  This product is not expected to cause eye irritation under normal conditions of use. Symptoms of slight eye irritation may result when direct contact occurs, or when exposed to high mist levels in poorly ventilated areas.

- Skin
  Short term skin contact is not expected to cause skin irritation. Prolonged or repeated direct exposure to the skin may result in symptoms of irritation and redness. In severe cases, prolonged or repeated contact may result in dermatitis accompanied by symptoms of irritation, itching, dryness, cracking and/or inflammation.

- Inhalation:
  This product has low volatility and so is not expected to cause respiratory tract irritation during normal conditions of use. Exposure to high mist levels in poorly ventilated areas may cause upper respiratory tract irritation and difficulty breathing.

- Ingestion:
  Ingestion may cause slight stomach irritation and discomfort.
- Potential Chronic Health Effects
  No further data known.
- Medical Conditions Aggravated By Exposure:
  No further data known.
- Carcinogenicity:
  This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

HMIS RATING:

Health	Flammability	Reactivity	PPE
1	1	0	X

Section 3 – Composition / Information On Ingredients

Components listed in this section may contribute to the potential hazards associated with exposure to the concentrate. The product may contain additional non-hazardous or trade secret components.

Component:	CAS #	% By Weight
Mineral Oil	64742-54-7	> 90
Sulfur Additive Package	Mixture	< 10

This product does not contain silicone.

Product Name ..... : RIDGID Dark Thread Cutting Oil

Section 4 – First Aid Measures

EYE CONTACT:

Upon direct eye contact, hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. If irritation is due to exposure to mist or vapors, remove the individual to fresh air. If irritation persists, flush the eyes with clean water until the irritation subsides. If symptoms persist, contact a physician.

SKIN CONTACT:

Remove product from the skin by washing with a mild soap and water. Contaminated clothing should be removed to prevent prolonged exposure. If symptoms of exposure persist, contact a physician.

INHALATION:

Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs, remove the employee to fresh air. Contact a physician or other medical professional if irritation or distress persists.

INGESTION:

If small amounts are ingested, first aid measures are not likely to be necessary. If larger amounts are ingested or if symptoms of ingestion occur, dilute stomach contents with two glasses of water or milk. (NOTE: Do NOT give anything by mouth to an unconscious person.) Do not induce vomiting without medical supervision. If vomiting occurs spontaneously, keep airway clear. If symptoms of ingestion persist, seek medical attention.

Section 5 – Fire Fighting Measures

FIRE AND EXPLOSIVE PROPERTIES:

Flashpoint..... :	385°F Cleveland Open Cup
Flammability Limits..... :	LEL - N/A
	UEL - N/A

EXTINGUISH MEDIA:

In accordance with NFPA guidance, dry chemical, foam or CO2 fire extinguishers are all acceptable. Note that while water fog extinguishers are also acceptable, do NOT apply a direct stream of water onto burning product because it may cause spreading and increase fire intensity.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

No further data known.

FIRE-FIGHTING PROCEDURES AND EQUIPMENT:

Emergency responders in the danger area should wear bunker gear and self-contained breathing apparatus for fires beyond the incipient stage. See Section 8 of the MSDS for other PPE to be worn as conditions warrant.

Section 6 – Accidental Release Measures

PERSONAL PRECAUTIONS:

Use personal protection recommended in Section 8.

ENVIRONMENTAL:

This material is a water pollutant. Do not let spilled or leaking material enter waterways.

CLEAN-UP MEASURES:

Important: As with any spill or leak, before responding, ensure that you are familiar with the potential hazards and recommendations of the MSDS. Appropriate personal protective equipment must be worn.

If possible, safely contain the spill with dikes or other spill response equipment appropriate for petroleum or organic material releases. Take measures to prevent spreading of product. Note that while product will ignite, it will not readily burn. However, as a precaution, eliminate ignition sources. Prevent from entering sewers or waterways. Large volumes may be transferred to an appropriate container for proper disposal. Small volumes or residues may be soaked up with absorbents. Spill response materials should be collected for proper disposal.

Section 7 – Handling And Storage

HANDLING:

As with any industrial chemical, handle the product in a manner that minimizes exposure to practicable levels. Prior to handling, consult Section 8 of this MSDS to evaluate personal protective equipment needs. Open containers slowly to relieve any pressure. Follow all other standard industrial hygiene practices.

Empty containers may contain product residue. All safety precautions taken when handling this product should also be taken when handling empty drums and containers. Keep containers closed when not in use.

Product residue in empty containers is combustible but will not readily burn. Note, however, that excessive heating or cutting of empty containers may create an ignition source sufficient to start a fire and, in extreme cases, cause an explosion.

STORAGE:

Protect product quality by storing indoors and away from extreme temperatures. Close all containers when not in use.

Section 8 – Exposure Controls / Personal Protection

EXPOSURE GUIDELINES:

Component		
Mineral Oil	ACGIH TLV: ACGIH STEL: OSHA PEL:	5 mg / m3 (as mist) 10 mg / m3 (as mist) 5 mg / m3 (as mist
Sulfur Additive Package	No information	

ENGINEERING CONTROLS:

Normal general ventilation is expected to be adequate. It is recommended that ventilation be designed in all instances to maintain airborne concentrations at lowest practicable levels. Ventilation should, at a minimum, prevent airborne concentrations from exceeding any exposure limits.

The user may wish to refer to 29 CFR 1910.1000(d) (2) and the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices" (Appendix C) for the determination of exposure limits of mixtures. An industrial hygienist or similar professional may be consulted to confirm that the calculated exposure limits apply.

PERSONAL PROTECTIVE EQUIPMENT:

Selection of personal protective equipment should be based upon the anticipated exposure and made in accordance with OSHA's Personal Protective Equipment Standard found in 29 CFR 1910 Subpart I. The following information may be used to assist in PPE selection.

- Eye Protection
  Wear eye protection appropriate to prevent eye exposure. Where splashing is not likely, chemical safety glasses with side shields are recommended. Where splashing may occur, chemical goggles or full face shield is recommended.

- Skin Protection
  Gloves are not normally needed during normal conditions of use. If health effects are experienced, oil or chemical resistant gloves such as butyl or nitrile are recommended. Where splashing or soaking is likely, wear oil or chemical resistant clothing to prevent exposure.

- Respiratory Protection
  A respirator may be worn to reduce exposure to vapors, dust or mist. Select a NIOSH/MSHA approved respirator appropriate for the type and physical character of the airborne material. A self-contained breathing apparatus is recommended in all situations where airborne contaminant concentration has not been confirmed to be below safe levels. Respirator use should comply with the OSHA Respirator Protection Standard found in 29 CFR 1910.134.

- General Hygiene Considerations
  Wash thoroughly after handling.

Product Name ..... : RIDGID Dark Thread Cutting Oil

Section 9 – Physical And Chemical Properties

Physical Appearance:..... :	Black
Odor. ..... :	Mild Petroleum
Physical State ..... :	Liquid
Water Solubility ..... :	Insoluble
Specific Gravity ..... :	.878
VOC ..... :	2.5%

Section 10 – Stability And Reactivity

STABILITY:

This product is stable.

CONDITIONS TO AVOID:

Avoid contact with incompatible materials and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS:

This product is incompatible with strong oxidizing agents.

DECOMPOSITION PRODUCTS MAY INCLUDE:

Thermal decomposition products are dependent on combustion conditions. A complex mixture of airborne solid, liquid, particulates and gasses may evolve when the material burns. Combustion by-products may include:

oxides of carbon

oxides of sulfur

incompletely burned hydrocarbons as fumes and smoke

POSSIBILITY OF HAZARDOUS REACTIONS:

This product is not expected to polymerize

Section 11 – Toxicological Information

ACUTE:

Oral LD_{50}: Not determined
Inhalation LC_{50}: Not determined

CHRONIC: No further toxicological data known.

SENSITIZATION: No further toxicological data known.

REPRODUCTIVE EFFECTS: No further toxicological data known.

TERATOGENIC EFFECTS: No further toxicological data known.

MUTAGENICITY: No further toxicological data known.

SYNERGISTIC MATERIALS: No further toxicological data known.

CARCINOGENICITY: This product is not listed as a known or suspected carcinogen by IARC, OSHA or the NTP.

Section 12 – Ecological Information

ECOTOXICOLOGICAL INFORMATION:

This product has not been evaluated for ecotoxicity. As with any industrial chemical, exposure to the environment should be prevented and minimized wherever possible.

ENVIRONMENTAL FATE:

The degree of biodegradability and persistence of this product has not been determined.

VOC CONTENT:

2.5%

Product Name ..... : RIDGID Dark Thread Cutting Oil

Section 13 – Disposal Consideration

WASTE DISPOSAL:

Ensure that collection, transport, treatment and disposal of waste product and containers complies with all applicable laws and regulations. Note that use, mixture, processing or contamination of the product may cause the material to be classified as a hazardous waste. It is the responsibility of the product user or owner to determine at the time of disposal whether the product is regulated as a hazardous waste.

Section 14 – Transportation Information

U.S. DOT HAZARDOUS MATERIAL INFORMATION:

Not DOT regulated.

CANADA TRANSPORT OF DANGEROUS GOODS:

This material is not TDG regulated.

Section 15 – Regulatory Information

FEDERAL REGULATIONS:

SARA 313:

This product contains NONE of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

CLEAN WATER ACT:

This product contains mineral oil and is subject to regulation by Section 311 of the Clean Water Act and the Oil Pollution Act. Releases of the product into or leading to surface waters must be reported to the National Response Center at 1-800-424-8802.

CERCLA REPORTABLE QUANTITY:

Any components listed below have been assigned a reportable quantity (RQ) by the Federal EPA. Releases of the product into the environment that exceed the RQ for a particular component must be reported to the National Response Center at 1-800-424-8802.

None to report

TOXIC SUBSTANCE CONTROL ACT:

The components of this product are listed on the TSCA Inventory.

OZONE DEPLETING SUBSTANCES:

This product contains no ozone depleting substances as defined by the Clean Air Act.

HAZARDOUS AIR POLLUTANTS:

Any components listed below are defined by the Federal EPA as hazardous air pollutants:

None to report

STATE REGULATIONS

This product contains mineral oil, and as used, may be regulated by state used oil regulations. Check with the appropriate state agency to determine whether such a regulation exists.

CANADA

WHMIS Classification: Not controlled under WHMIS

DSL:

The components of this product are listed on DSL Inventory.

Product Name ..... : RIDGID Dark Thread Cutting Oil

Section 16 – Other Information

Prepared by:. . . . . Ridge Tool Company

Issue Date: . . . . . June 13, 2013
Last Revision Date: . . . . . October 12, 2009

RIDGE TOOL BELIEVES THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700

Rust-Oleum Corp.
www.rustoleum.com

1. Identification

Product Name: ROHPER LSPR 6PK GLOSS WHITE

Revision Date: 4/22/2013

Identification Number: V2192838

Product Use/Class: Topcoat/Aerosols

Supplier: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Manufacturer: Rust-Oleum Corporation
11 Hawthorn Parkway
Vernon Hills, IL 60061
USA

Preparer: Regulatory Department

2. Hazard Identification

EMERGENCY OVERVIEW: Harmful if swallowed. Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Contents Under Pressure.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: Causes eye irritation.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: Substance may cause slight skin irritation. Prolonged or repeated contact may cause skin irritation.

EFFECTS OF OVEREXPOSURE - INHALATION: Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Avoid breathing fumes, spray, vapors, or mist. High vapor concentrations are irritating to the eyes, nose, throat and lungs.

EFFECTS OF OVEREXPOSURE - INGESTION: Substance may be harmful if swallowed. Aspiration hazard if swallowed; can enter lungs and cause damage.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage. IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, Skin Contact

3. Composition/Information On Ingredients

Chemical Name	CAS-No.	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Liquefied Petroleum Gas	68476-86-8	25.0	N.E.	N.E.	N.E.	N.E.
Acetone	67-64-1	20.0	500 ppm	750 ppm	1000 ppm	N.E.
Alkyd Resin	PROPRIETARY	20.0	N.E.	N.E.	N.E.	N.E.
Titanium Dioxide	13463-67-7	15.0	10 mg/m3	N.E.	15 mg/m3 [Total Dust]	N.E.
n-Butyl Acetate	123-86-4	10.0	150 ppm	200 ppm	150 ppm	N.E.

Xylene	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
Ethylbenzene	100-41-4	5.0	20 ppm	125 ppm	100 ppm	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.
Solvent Naptha, Light Aromatic	64742-95-6	1.0	N.E.	N.E.	N.E.	N.E.
Amorphous Silica	7631-86-9	1.0	N.E.	N.E.	0.8 mg/m3	N.E.

4. First-aid Measures

FIRST AID - EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

FIRST AID - SKIN CONTACT: Wash skin with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists.

FIRST AID - INHALATION: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

FIRST AID - INGESTION: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

5. Fire-fighting Measures

Flash Point, °F -156 (Setaflash)

Extinguishing Media: Alcohol Foam, Carbon Dioxide, Dry Chemical, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS: FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

SPECIAL FIREFIGHTING PROCEDURES: Evacuate area and fight fire from a safe distance.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

7. Handling and Storage

HANDLING: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing fumes, vapors, or mist.

STORAGE: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

8. Exposure Controls/Personal Protection

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

RESPIRATORY PROTECTION: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

SKIN PROTECTION: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

EYE PROTECTION: Use safety eyewear designed to protect against splash of liquids.

OTHER PROTECTIVE EQUIPMENT: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

HYGIENIC PRACTICES: Wash thoroughly with soap and water before eating, drinking or smoking.

9. Physical and Chemical Properties

Vapor Density	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in Water:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.849	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

10. Stability and Reactivity

CONDITIONS TO AVOID: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

INCOMPATIBILITY: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

HAZARDOUS DECOMPOSITION: By open flame, carbon monoxide and carbon dioxide. When heated to decomposition, it emits acrid smoke and irritating fumes.

HAZARDOUS POLYMERIZATION: Will not occur under normal conditions.

STABILITY: This product is stable under normal storage conditions.

11. Toxicological Information

Chemical Name	LD50	LC50
Liquefied Petroleum Gas	N.E.	N.E.
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Alkyd Resin	N.E.	N.E.
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
n-Butyl Acetate	13100 mg/kg (Rat, Oral)	2000 ppm (Rat, Inhalation, 4 Hr)
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Propylene Glycol Monobutyl Ether	2200 mg/kg (Rat, Oral)	N.E.
Solvent Naptha, Light Aromatic	4700 mg/kg (Rat, Oral)	3670 mg/kg (Rat, Inhalation)

Amorphous Silica	>7500 mg/kg (Rat)	>250 mg/m3 (Rat, 6Hr)

12. Ecological Information

ECOLOGICAL INFORMATION: Product is a mixture of listed components.

13. Disposal Information

DISPOSAL INFORMATION: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter waterways, wastewater. soil, storm drains or sewer systems.

14. Transport Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	N.A.	Yes	Yes

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

Sara Section 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
Xylene	1330-20-7
Ethylbenzene	100-41-4
Diethylene Glycol Methyl Ether	111-77-3

Toxic Substances Control Act:

This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b)components exist in this product.

International Regulations:

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

Canadian WHMIS Class: AB% D2A D2B

16. Other Information

HMIS Ratings:

Health:	2*	Flammability:	4	Physical Hazard:	0	Personal Protection:	X

NFPA Ratings:

Health:	2	Flammability:	4	Instability	0

Volatile Organic Compounds, g/L: 521

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

LA-CO Markal

SAFETY DATA SHEET

Section 1: Product and Company Identification

Product Name: Slic-Tite® Paste with PTFE

Product Code: 41209, 42009, 41219, 42019, 42012, 42029, 42013, 42049, 42014, 42015, 42069, 42999, 42001, 42002

Product Use: Heavy-duty thread sealant.

Manufacturer: LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL.
60007-5746
E-mail Contact: customer_service@laco.com

Phone Number: (847) 956-7600
Fax: (847) 956-9885

24-hour Emergency: CHEMTREC: (800) 424-9300

Section 2: Hazards Identification

Protective Clothing	OSHA Classification	EC Classification	WHMIS (Canada)	Transportation
Not Required for Normal Use	Not classified as a hazardous chemical	Not Classified as Dangerous	Not Controlled	Not Regulated

Emergency Overview:

Exposure to hazardous or dangerous substances is not expected when handling this product for its intended use. Extreme heating (>300°C) or during a fire may generate dense smoke, irritating and toxic fumes.

Appearance, Color and Odor: Viscous paste; white; grease-like odor.

USA: This product is not a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Standard.

Canada: This is not a controlled product under WHMIS.

European Communities (EC): This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

While this product is not considered hazardous, this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Potential Health Effects: **ACUTE (short term): see Section 8 for exposure controls**

Relevant Route(s) of Exposure: Skin contact.

Inhalation: Inhalation is not expected with normal use.

Extreme heating (>300°C) of the product can release irritating vapors. Symptoms of irritation include coughing, sneezing, nasal discharge, headache, hoarseness and pain in the upper respiratory tract.
Products of thermal decomposition of fluorocarbon monomers and polymers can produce a condition known as "polymer-fume fever"; the symptoms are flu-like (chills, headache and fever) with chest tightness and mild cough; onset of symptoms may be delayed.

Ingestion: Not an applicable route of occupational exposure. Components of the product have low oral toxicity.

Skin: No health effects expected with normal use of the product.

Eye: Direct eye contact may cause temporary irritation as a foreign object in the eye. Symptoms of irritation include redness, swelling, pain and blurred or hazy vision.

SAFETY DATA SHEET

Section 2: Hazards Identification, continued

CHRONIC (long term): see Section 11 for additional toxicological data

Prolonged or repeated skin contact may cause dermatitis in some individuals.

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis.

Interactions With Other Chemicals: Cigarette smoking is a common means of creating exposure to the products of decomposition of fluorocarbon monomers and polymers. Fluorocarbons may be deposited on cigarettes from the air or from workers' fingers. As a cigarette is smoked, fluorocarbons are then burned and the products of decomposition are inhaled with the cigarette smoke.

Potential Environmental Effects: Not available

Section 3: Composition / Information on Ingredients

Hazardous Ingredients:

Chemical Name	CAS No.	Wt.%	EINECS / ELINCS	Symbol	Risk Phrases
Ethanol	64-17-5	0.1 - 0.5	200-578-6	F	R11
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6	10 - 30	265-156-6	Not applicable contains <3% DMSO extract by IP 346	
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5	10 - 30	265-155-0	Not applicable contains <3% DMSO extract by IP 346	
PTFE	9002-84-0	15 - 40	Polymer not listed Monomer is listed 204-126-9	None*	None

* This chemical substance is not classified in the Annex I of Directive 67/548/EEC.
Note: See Section 16 for the full text of the R-phrases above.

Section 4: First Aid Measures

Inhalation: If symptoms are experienced remove source of contamination or move victim to fresh air and obtain medical advice.

Eye Contact: No effects expected. If irritation occurs, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

Skin Contact: No health effects expected. If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.

Ingestion: If irritation or discomfort occurs, obtain medical advice immediately.

Section 5: Fire Fighting Measures

Flammable Properties: The paste can burn if involved in a fire but does not ignite readily.

Suitable extinguishing Media: Use extinguishing media appropriate for the surrounding fire.

Unsuitable extinguishing Media: Not available

Explosion Data:
Sensitivity to Mechanical Impact: Not applicable

Sensitivity to Static Discharge: Not applicable

Specific Hazards arising from the Chemical: During a fire, products of combustion may include Hydrogen fluoride, Perfluoro- carbon olefins and oxides of carbon.

SAFETY DATA SHEET

Section 5: Fire Fighting Measures, continued

Protective Equipment and precautions for firefighters: Self-contained breathing apparatus and protective clothing should be worn. Remove all unprotected personnel.

NFPA

Health:	1
Flammability:	1
Instability:	0

Section 6: Accidental Release Measures

Personal Precautions: Wear adequate personal protective equipment as indicated in Section 8.

Environmental Precautions: Minimize entry of material into sewers and drainage systems.

Methods for Containment: Contain spill immediately.

Methods for Clean-up: Scrape or scoop product for re-use or place in a secure container for disposal.

Section 7: Handling and Storage

Handling: Wash hands thoroughly with detergent and water after handling, before eating, drinking, smoking or using the toilet. Remove contaminated clothing and wash before reuse. Keep out of reach of children.

Storage: Store in a cool, dry area, out of direct sunlight and away from heat, flames and ignition sources. Keep containers closed when not in use.

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines

Some component substances in this preparation have Occupational Exposure Limits/Guidelines. Exposure to airborne component substances is not expected with anticipated use. Consult local authorities for acceptable exposure limits.

Exposure Controls

Engineering Controls: Not required for normal use.

Personal Protection:

Eye/Face Protection: Not required for normal use.

Skin Protection: Not required for normal use.

Respiratory Protection: Not required for normal use.

General Hygiene Measures: Avoid breathing fumes generated from heated product. Do not eat, drink or smoke in work areas. Wash hands after handling this product.

SAFETY DATA SHEET

Section 9: Physical and Chemical Properties

Physical State:	Solid	**Flash Point & method:**	150°C (300°F)
Appearance, Color and Odor:	Viscous paste; white; grease-like odor.	**Autoignition Temperature:**	Not available
Odor Threshold:	Not available	**Flammability Limits in Air:**	Not available
pH:	Not applicable	**Vapor Pressure:**	Not applicable
Specific Gravity: (water = 1)	1.48 (12.35 lbs/gal.)	**Vapor Density: (Air = 1)**	Not applicable
Partition coefficient: (n-octanol/water)	<1	**Evaporation Rate: (n-Butyl Acetate = 1)**	Not applicable
Solubility:	Insoluble in water.	**Boiling Point/Range:**	177°C (350°F)
Viscosity:	Not applicable	**Melting Point:**	Not available
Decomposition Temperature:	Not available	**VOC Content:**	0% w/w

Section 10: Stability and Reactivity

Chemical Stability:	Stable at normal room temperature.
Conditions to Avoid:	Avoid extreme heat and open flames.
Incompatible Materials:	Incompatible with strong oxidizers, strong acids, strong bases, chlorinated solvents.
Hazardous Decomposition Products:	When heated to decomposition (>300°C) this material may release carbonyl fluoride, hydrogen fluoride, perfluoroisobutylene (PFIB) and other irritating and toxic vapors or particulates.
Possibility of Hazardous Reactions:	Not available

Section 11: Toxicological Information

Acute Toxicity Data

	LD_{50} Oral (mg/kg)	LD_{50} Dermal (mg/kg)	LC_{50} Inhalation (4 hrs.)
Ethanol	1 501 (rat)	Not available	124.7 mg/L (rat)
Distillates (petroleum), hydrotreated light naphthenic	>5 000 (rat)	>2 000 (rabbit)	2.18 mg/L (rat)
Distillates (petroleum), hydrotreated heavy naphthenic	>5 000 (rat)	>2 000 (rabbit)	Not available
PTFE	Not available	Not available	Not available

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Section 11: Toxicological Information (continued)

Chronic Toxicity Data

Carcinogenicity:

Distillates (petroleum) have less than 3% DMSO extract as measured by IP 346. This product is not required to be labeled according to the European Directive 67/548/EEC.
Contains Titanium dioxide (IARC 2B); titanium dioxide is inextricably bound and, under normal conditions of use or during foreseeable emergencies, cannot become airborne and result in worker exposure.

ACGIH A4, Not classifiable as a human carcinogen.
Group 3 – The agent is not classifiable as to its carcinogenicity in humans.

	ACGIH	IARC	NTP
Ethanol	A4	Not applicable	Not applicable
Distillates (petroleum), hydrotreated light naphthenic	Not listed	Group 3	Not listed
Distillates (petroleum), hydrotreated heavy naphthenic	Not listed	Not listed	Not listed
PTFE	Not listed	Group 3	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)
IARC: (International Agency for Research on Cancer)
NTP: (National Toxicology Program)

Irritation: Normal use will not result in harmful effects.

Corrosivity: Not available

Sensitization: Not applicable with normal use.

Neurological Effects: Not applicable with normal use.

Genetic Effects: Not available

Reproductive Effects: Not applicable with normal use.

Developmental Effects: Not applicable with normal use.

Target Organ Effects: Not available

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity is expected to be low due to the product's insolubility in water.

Persistence/Degradability: Product is not readily biodegradeable.

Bioaccumulation/Accumulation: Not available

Mobility: Not available

Section 13: Disposal Considerations

Waste Disposal Method: Do NOT discard into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage.
The conditions of use, storage and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, LA-CO Industries, Inc. does not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

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Section 14: Transport Information:

U.S. Hazardous Materials Regulation (DOT 49CFR):	Not regulated as a dangerous good for transport.
Canadian Transportation of Dangerous Goods (TDG):	Not regulated as a dangerous good for transport.
ADR/RID:	Not regulated as a dangerous good for transport.
IMDG:	Not regulated as a dangerous good for transport.
Marine Pollutants:	Not applicable
ICAO/IATA:	Not regulated as a dangerous good for transport.

Section 15: Regulatory Information

USA

TSCA Status: All ingredients in the product are listed on the TSCA inventory.

SARA Title III
Sec. 302/304: None
Sec. 311/312: Not applicable
Sec. 313: Not applicable
CERCLA RQ: Not applicable

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer or reproductive harm.

State Right-to-Know Lists : Massachusetts, New Jersey, Pennsylvania; Distillates (petroleum), hydrotreated naphthenic, Ethanol, 12-hydroxy lithium stearate, Titanium dioxide, BHT.

Canada

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations.*

WHMIS Classification: (for workplace exposures) Not controlled

New Substance Notification Regulations: All ingredients in the product are listed, as required, on Canada's Domestic Substances List (DSL).

NPRI Substances: Not applicable

EC Classification for the Substance/Preparation

Symbol: This product is not classified as dangerous according to Directive 1999/45/EC and its amendments.

SAFETY DATA SHEET

Section 16: Other Information

Full Text of R-phrases appearing in Section 2:	R11: Highly flammable.
Preparation Information:	
Revision Date:	September 17, 2012
Revision Summary:	Review of regulatory, hazard classification, exposure limit and toxicology data. No revisions to data.
Manufacturer Disclaimer:	The information contained herein is based on data available to us and is accurate and reliable to the best of our knowledge and belief. However, LA-CO Industries, Inc. makes no representations as to its completeness or accuracy. Information is supplied on condition that persons receiving such information will make their own determination as to its suitability for their purposes prior to use. In no event will LA-CO Industries, Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon the information contained herein.
Prepared by:	LEHDER Environmental Services Limited (519) 336-4101 www.lehder.com
Disclaimer:	While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.

smokesabre
SMOKE DETECTOR TESTER

Smoke Sabre

SAFETY DATA SHEET

SDS0084UK

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH) & 453/2010

1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1	**Product identifier**	
	Product Name	Smoke Sabre.
	Trade Name	Smokesabre-01-XXX (XXX denotes customer variant).
	CAS No.	Mixture.
	EINECS No.	Mixture.
	REACH Registration No.	None assigned.
1.2	**Relevant identified uses of the substance or mixture and uses advised against**	
	Identified use(s)	Smoke simulation.
	Uses advised against	None known.
1.3	**Details of the supplier of the Safety Data Sheet**	
	Company Identification	Detectortesters (No Climb Products Ltd) Edison House 163 Dixons Hill Road Welham Green Hertfordshire. AL9 7JE. United Kingdom
	Telephone	+44 (0) 1707 282760
	Fax	+44 (0) 1707 282777
	E-mail	SDS@detectortesters.com
1.4	**Emergency telephone number**	
	Emergency Phone No.	+44 (0) 1707 282760

2. SECTION 2: HAZARDS IDENTIFICATION

2.1	**Classification of the substance or mixture**	
	Directive 67/548/EEC & Directive 1999/45/EC	F+; Extremely flammable.
2.2	**Label elements**	According to Directive 67/548/EEC & Directive 1999/45/EC
	Hazard Symbol	
	Risk Phrases	R12: Extremely flammable.
	Safety Phrases	S2: Keep out of the reach of children. S9: Keep container in a well-ventilated place. S16: Keep away from sources of ignition - No smoking.
	Additional Information	96.5 % by mass of the contents are flammable. Do not spray on a naked flame or any incandescent material. Do not pierce or burn, even after use. Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C.
2.3	**Other hazards**	None.
2.4	**Additional Information**	None.

3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Product as supplied: Aerosol.

3.1 Mixtures

EC Classification No. 67/548/EEC

Hazardous ingredient(s)	%W/W	CAS No.	EC No.	REACH Registration No.	EC Classification and Risk Phrases
Butane	50 - 100	106-97-8	203-448-7	01-2119474691-32	F+; R12
Propane	10 - 25	74-98-6	200-827-9	01-2119486944-21	F+; R12
Ethanol	0 - 5	64-17-5	200-578-6	None assigned	F; R11

3.2 Additional Information

For full text of R/S phrases see section 16.

4. SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation — If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin Contact — Wash with plenty of soap and water.

Eye Contact — Flush eyes with water for at least 15 minutes while holding eyelids open.

Ingestion — Unlikely route of exposure.

4.2 Most important symptoms and effects, both acute and delayed — None anticipated.

4.3 Indication of any immediate medical attention and special treatment needed — Unlikely to be required but if necessary treat symptomatically.

5. SECTION 5: FIRE-FIGHTING MEASURES

Pressurised container: May burst if heated.

5.1 Extinguishing Media

Suitable Extinguishing Media — Extinguish with carbon dioxide, dry chemical, foam or waterspray.

Unsuitable Extinguishing Media — Do not use water jet.

5.2 Special hazards arising from the substance or mixture — Heating may cause pressure rise with risk of bursting.

5.3 Advice for fire-fighters — Fire fighters should wear complete protective clothing including self-contained breathing apparatus. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions.

6. SECTION 6: ACCIDENTAL RELEASE MEASURES

The product is an aerosol. It is unlikely to present spillage or leakage hazard. In case of rupture, released content should be contained as any other solvent spill.

6.1	**Personal precautions, protective equipment and emergency procedures**	Ensure adequate ventilation. Wear suitable gloves and eye/face protection.
6.2	**Environmental precautions**	Do not release large quantities into the surface water or into drains.
6.3	**Methods and material for containment and cleaning up**	Collect mechanically and dispose of according to Section 13. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a lidded container for disposal or recovery. Containers must not be punctured or destroyed by burning, even when empty.
6.4	**Reference to other sections**	See Also Section: 8, 13.

7. SECTION 7: HANDLING AND STORAGE

7.1	**Precautions for safe handling**	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Provide adequate ventilation. Do not eat, drink or smoke during work. Wash hands thoroughly after handling.
7.2	**Conditions for safe storage, including any incompatibilities**	Observe official regulations on storing packagings with pressurised containers.
	Storage Temperature	Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50 °C.
	Storage Life	Stable under normal conditions.
	Incompatible materials	None anticipated.
7.3	**Specific end use(s)**	Smoke simulation.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Butane	106-97-8	600	1450	750	1810	WEL
Ethanol	64-17-5	1000	1920	-	-	WEL

WEL: Workplace Exposure Limit (UK HSE EH40)

8.1.2	**Biological limit value**	Not established.
8.1.3	**PNECs and DNELs**	Not established.

8.2	**Exposure controls**	
8.2.1	**Appropriate engineering controls**	Provide adequate ventilation.
8.2.2	**Personal protection equipment**	
	Eye/face protection	If eye contact is likely: Wear protective eyewear (goggles, face shield, or safety glasses).
		
	Skin protection (Hand protection/ Other)	Wear suitable gloves if prolonged skin contact is likely. Gloves: Nitrile rubber, NBR.
		
	Respiratory protection	No personal respiratory protective equipment normally required. Handling of larger amounts: In case of insufficient ventilation, wear suitable respiratory equipment. A suitable mask with filter type A (EN14387 or EN405) may be appropriate.
		
	Thermal hazards	Not applicable.
8.2.3	**Environmental Exposure Controls**	Do not release large quantities into the surface water or into drains.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	**Information on basic physical and chemical properties**	
	Appearance	Aerosol.
	Colour	Colourless.
	Odour	Characteristic.
	Odour Threshold	Not determined.
	pH	Not determined.
	Melting Point/Freezing Point	Not determined.
	Initial boiling point and boiling range	-44 °C
	Flash Point	<0 °C
	Evaporation rate	Not available.
	Flammability (solid, gas)	Extremely flammable.
	Upper/lower flammability or explosive limits	Explosive Limit Ranges: 1.5 – 15.0 Vol-%
	Vapour pressure	4.3 bar @ 20 °C
	Density	0.58 g/cm³ @ 20 °C
	Vapour density	Not determined.
	Relative density	Not determined.
	Solubility(ies)	Immiscible with water.
	Partition coefficient: n-octanol/water	Not determined.
	Ignition temperature	365 °C
	Auto-ignition temperature	Product is not selfigniting.
	Decomposition Temperature	Not determined.
	Kinematic Viscosity	Not determined.
	Explosive properties	Not explosive.
	Oxidising properties	Not oxidising.
9.2	**Other information**	
	Organic solvents - Content	96.4%
	Solid Content	2.0%

10. SECTION 10: STABILITY AND REACTIVITY

10.1	Reactivity	Stable under normal conditions.
10.2	Chemical stability	Stable under normal conditions.
10.3	Possibility of hazardous reactions	Stable under normal conditions.
10.4	Conditions to avoid	Heat and direct sunlight.
10.5	Incompatible materials	None anticipated.
10.6	Hazardous Decomposition Product(s)	None known.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1	Information on toxicological effects	
11.1.1	Mixtures	
	Acute toxicity	Low acute toxicity.
	Irritation	Non-irritant.
	Corrosivity	Not classified.
	Sensitisation	It is not a skin sensitiser.
	Repeated dose toxicity	None anticipated.
	Carcinogenicity	No evidence of carcinogenicity.
	Mutagenicity	There is no evidence of mutagenic potential.
	Toxicity for reproduction	None anticipated.
	Aspiration hazard	None anticipated.
11.2	Other information	None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1	Toxicity	Low toxicity to aquatic organisms.
12.2	Persistence and degradability	The product is readily biodegradable. Unlikely to persist.
12.3	Bioaccumulative potential	The product has no potential for bioaccumulation.
12.4	Mobility in soil	Immiscible with water. The product is predicted to have low mobility in soil.
12.5	Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
12.6	Other adverse effects	None.

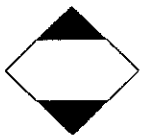
13. SECTION 13: DISPOSAL CONSIDERATIONS

13.1	Waste treatment methods	Recycle only completely emptied packaging. Containers must not be punctured or destroyed by burning, even when empty. Non-emptied aerosol: Dispose of wastes in an approved waste disposal facility. Do NOT landfill.
13.2	Additional Information	Disposal should be in accordance with local, state or national legislation.

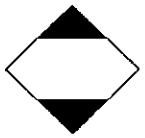
14. SECTION 14: TRANSPORT INFORMATION

14.1	UN number	
	ADR, IMDG, IATA	UN 1950
14.2	UN Proper Shipping Name	
	ADR	1950 AEROSOLS
	IMDG	AEROSOLS
	IATA	AEROSOLS, Flammable
14.3	Transport hazard class(es)/ Division	
	ADR	
	Class	2 5F Gases
	Label	2.1
	IMDG, IATA	
	Class	2.1
	Label	2.1

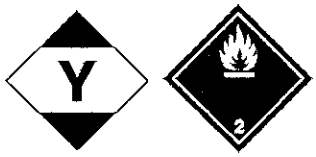
14.4	**Packing Group**	
	ADR, IMDG, IATA	None.
14.5	**Environmental hazards**	
	Marine Pollutant	No.
14.6	**Special precautions for user**	Warning: Gases.
	Kemler Code	-
	IMDG EMS	F-D, S-U
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
14.8	**Additional Information**	
	ADR	
	Limited Quantity (LQ)	1 L



	ADR Transport Category	2
	Tunnel Restriction Code	D
	IMDG	
	Limited Quantity (LQ)	



	IATA	
	Limited Quantity (LQ)	



	UN "Model Regulation"	UN 1950, AEROSOLS, 2.1

15. SECTION 15: REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	
15.1.1	**EU regulations**	
	Authorisations and/or restrictions on use	
	Candidate List of Substances of Very High Concern for Authorisation	All chemicals are not listed.
	REACH: ANNEX XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	All chemicals are not listed.
	REACH: ANNEX XIV List of substances subject to authorisation	All chemicals are not listed.
	Community Rolling Action Plan (CoRAP); Draft 29/02/2012	All chemicals are not listed.
15.1.2	**National regulations**	None known.
	Wassergefährdungsklasse (Germany)	
	Ethanol	WGK class 1
	Technical Instructions (air)	

Class	Share in %
NK	50 - 100

	VOC-CH	96.45%
	VOC-EU	559.4g/l
	Danish MAL Code	3-1
15.2	**Chemical Safety Assessment**	Not available.

16. SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
vPvB	very Persistent and very Bioaccumulative
WGK	Wassergefährdungsklasse (Germany)
VOC	Volatile Organic Compounds
MAL Code	Måleteknisk Arbejdshygiejnisk Luftbehov (Regulation for the labeling concerning inhalation hazards, Denmark)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG	International Maritime Code for Dangerous Goods
IATA	International Air Transport Association
F+	Extremely flammable
F	Highly flammable

Risk Phrases

R11	Highly flammable.
R12	Extremely flammable.

Disclaimers

The information is based on the best knowledge of No Climb Products Ltd. and its advisors and is given in good faith, but we cannot guarantee its accuracy, reliability or completeness and therefore disclaim any liability for loss or damage arising out of use of this data. Since conditions of use are outside the control of the Company and its advisors we disclaim any liability for loss or damage when the product is used for purposes other than it is intended.

Annex to the extended Safety Data Sheet (eSDS)

No information available.

Sodium hydroxide (cas 1310-73-2) MSDS

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product name : Sodium hydroxide

Product Number	:	367176
Brand	:	Anonymous-Anonymous
Index-No.	:	011-002-00-6
CAS-No.	:	1310-73-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Skin corrosion (Category 1A)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Causes severe burns.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]
Pictogram

Signal word	Danger
Hazard statement(s)	
H314	Causes severe skin burns and eye damage.
Precautionary statement(s)	
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
Supplemental Hazard Statements	none

According to European Directive 67/548/EEC as amended.
Hazard symbol(s)

R-phrase(s)	
R35	Causes severe burns.
S-phrase(s)	
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39	Wear suitable gloves and eye/face protection.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 'Caustic soda'

Formula	:	HNaO
Molecular Weight	:	40,00 g/mol

Component	Concentration
Sodium hydroxide	
CAS-No. 1310-73-2	-

EC-No.	215-185-5
Index-No.	011-002-00-6

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture
Sodium/sodium oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Immersion protection
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: > 480 min

Material tested:Dermatril? (Anonymous Z677272, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0,11 mm
Break through time: > 30 min
Material tested:Dermatril? (Anonymous Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Beads Colour: white
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	13,0 - 14
e)	Melting point/freezing point	Melting point/range: 318 °C - lit.
f)	Initial boiling point and boiling range	1.390 °C
g)	Flash point	not applicable
h)	Evaporation rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	< 24,00 hPa at 20 °C 4,00 hPa at 37 °C
l)	Vapour density	no data available
m)	Relative density	2,1300 g/cm3
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available

p)	Autoignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents, Strong acids, Organic materials

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Causes severe burns. - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Severe eye irritation - 24 h

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion	May be harmful if swallowed. Causes burns.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.

Signs and Symptoms of Exposure
spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Additional Information
RTECS: WB4900000

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Gambusia affinis (Mosquito fish) - 125 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia - 40,38 mg/l - 48 h

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number
ADR/RID: 1823 IMDG: 1823 IATA: 1823

14.2 UN proper shipping name
ADR/RID: SODIUM HYDROXIDE, SOLID
IMDG: SODIUM HYDROXIDE, SOLID
IATA: Sodium hydroxide, solid

14.3 Transport hazard class(es)
ADR/RID: 8 IMDG: 8 IATA: 8

14.4 Packaging group
ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards
ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user
no data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information this document is based on the resent state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. guidechem shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name:	STRUST +SSPR 6PK GLOSS SUNBURST YELLOW	Revision Date:	10/12/2011
Identification Number:	7747830		
Product Use/Class:	Topcoat/Aerosols		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Acetone	67-64-1	30.0	500 ppm	750 ppm	1000 ppm	N.E.
Liquefied Petroleum Gas	68476-86-8	30.0	N.E.	N.E.	N.E.	N.E.
Xylene	1330-20-7	10.0	100 ppm	150 ppm	100 ppm	N.E.
n-Butyl Acetate	123-86-4	10.0	150 ppm	200 ppm	150 ppm	N.E.
Titanium Dioxide	13463-67-7	5.0	10 mg/m3	N.E.	15 mg/m3 (Total Dust)	N.E.
Ethylbenzene	100-41-4	5.0	100 ppm	125 ppm	100 ppm	N.E.
Propylene Glycol Monobutyl Ether	5131-66-8	5.0	N.E.	N.E.	N.E.	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Contents Under Pressure. Vapors may cause flash fire or explosion. Harmful if swallowed. Extremely flammable liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. Harmful if inhaled. High gas, vapor, mist or dust concentrations may be harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: IARC lists Ethylbenzene as a possible human carcinogen (group 2B). Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by

IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces or spray mist and the actual concentration of Titanium Dioxide in the formula.
May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Dry Sand, Water Fog

Unusual Fire And Explosion Hazards: Perforation of the pressurized container may cause bursting of the can. Isolate from heat, electrical equipment, sparks and open flame. Keep containers tightly closed. Vapors can travel to a source of ignition and flash back. Vapors may form explosive mixtures with air. Closed containers may explode when exposed to extreme heat. FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Water spray may be ineffective.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers.

Section 7 - Handling And Storage

Handling: Wash thoroughly after handling. Wash hands before eating. Use only in a well-ventilated area. Avoid breathing vapor or mist. Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not

store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use explosion-proof ventilation equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Nitrile or Neoprene gloves may afford adequate skin protection. Use impervious gloves to prevent skin contact and absorption of this material through the skin.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Slight	Freeze Point:	N.D.
Specific Gravity:	0.794	pH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50
Acetone	5800 mg/kg (Rat)	50100 mg/m3 (Rat, 8Hr)
Liquefied Petroleum Gas	N.E.	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
n-Butyl Acetate	13100 mg/kg (Rat, Oral)	2000 ppm (Rat, Inhalation, 4 Hr)
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Propylene Glycol Monobutyl Ether	2200 mg/kg (Rat, Oral)	N.E.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shipping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Ethylbenzene	100-41-4

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Modified Alkyd Resin	PROPRIETARY

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Modified Alkyd Resin	PROPRIETARY
Barium Sulfate	7727-43-7

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

HMIS Ratings:

Health: 2*	Flammability: 4	Physical Hazard: 0	Personal Protection: X

NFPA Ratings:

Health: 2	Flammability: 4	Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/L: 509

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable

international, federal, state, and local laws and regulations.

Material Safety Data Sheet

24 Hour Assistance:
1-847-367-7700
Rust-Oleum Corp.
www.rustoleum.com

Section 1 - Chemical Product / Company Information

Product Name:	STRUST SSPR 6PK FLAT LT GRAY AUTO PRIMER	Revision Date:	10/28/2010
Identification Number:	2081830		
Product Use/Class:	Primer/Aerosol		
Supplier:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA	Manufacturer:	Rust-Oleum Corporation 11 Hawthorn Parkway Vernon Hills, IL 60061 USA
Preparer:	Regulatory Department		

Section 2 - Composition / Information On Ingredients

Chemical Name	CAS Number	Weight % Less Than	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL CEILING
Liquefied Petroleum Gas	68476-86-8	30.0	N.E.	N.E.	N.E.	N.E.
Xylene	1330-20-7	25.0	100 ppm	150 ppm	100 ppm	N.E.
Magnesium Silicate	14807-96-6	15.0	2 mg/m3	N.E.	0.1 mg/m3 (Respirable)	N.E.
Toluene	108-88-3	15.0	20 ppm	N.E.	200 ppm	300 ppm
Ethylbenzene	100-41-4	10.0	100 ppm	125 ppm	100 ppm	N.E.
Titanium Dioxide	13463-67-7	5.0	10 mg/m3	N.E.	15 mg/m3 (Total Dust)	N.E.
Basic Zinc Molybdate	61583-60-6	5.0	N.E.	N.E.	N.E.	N.E.

Section 3 - Hazards Identification

*** Emergency Overview ***: Contents Under Pressure. Harmful if inhaled. May affect the brain or nervous system causing dizziness, headache or nausea. Vapors may cause flash fire or explosion. Harmful if swallowed. Extremely flammable liquid and vapor.

Effects Of Overexposure - Eye Contact: Causes eye irritation.

Effects Of Overexposure - Skin Contact: Prolonged or repeated contact may cause skin irritation. Substance may cause slight skin irritation.

Effects Of Overexposure - Inhalation: High vapor concentrations are irritating to the eyes, nose, throat and lungs. Avoid breathing vapors or mists. High gas, vapor, mist or dust concentrations may be harmful if inhaled. Harmful if inhaled.

Effects Of Overexposure - Ingestion: Aspiration hazard if swallowed; can enter lungs and cause damage. Substance may be harmful if swallowed.

Effects Of Overexposure - Chronic Hazards: Contains Titanium Dioxide. Titanium Dioxide is listed as a Group 2B-"Possibly carcinogenic to humans" by IARC. Significant exposure is not anticipated during brush application or drying. Risk of overexposure depends on duration and level of exposure to dust from repeated sanding of surfaces

or spray mist and the actual concentration of Titanium Dioxide in the formula.
IARC lists Ethylbenzene as a possible human carcinogen (group 2B). May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion, and blurred vision) and/or damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to xylene in laboratory animals has been associated with liver abnormalities, kidney, lung, spleen, eye and blood damage as well as reproductive disorders. Effects in humans, due to chronic overexposure, have included liver, cardiac abnormalities and nervous system damage.

Primary Route(s) Of Entry: Skin Contact, Skin Absorption, Inhalation, Ingestion, Eye Contact

Section 4 - First Aid Measures

First Aid - Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes holding eyelids open. Get medical attention. Do NOT allow rubbing of eyes or keeping eyes closed.

First Aid - Skin Contact: Wash with soap and water. Get medical attention if irritation develops or persists.

First Aid - Inhalation: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical assistance immediately.

First Aid - Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Get immediate medical attention.

Section 5 - Fire Fighting Measures

Flash Point: -156 F (Setaflash)

Extinguishing Media: Film Forming Foam, Carbon Dioxide, Dry Chemical, Water Fog

Unusual Fire And Explosion Hazards: Water spray may be ineffective. Closed containers may explode when exposed to extreme heat. Vapors may form explosive mixtures with air. Vapors can travel to a source of ignition and flash back. FLASH POINT IS LESS THAN 20 °. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Perforation of the pressurized container may cause bursting of the can.

Special Firefighting Procedures: Evacuate area and fight fire from a safe distance.

Section 6 - Accidental Release Measures

Steps To Be Taken If Material Is Released Or Spilled: Contain spilled liquid with sand or earth. DO NOT use combustible materials such as sawdust. Dispose of according to local, state (provincial) and federal regulations. Do not incinerate closed containers. Remove all sources of ignition, ventilate area and remove with inert absorbent and non-sparking tools.

Section 7 - Handling And Storage

Handling: Wash thoroughly after handling. Follow all MSDS/label precautions even after container is emptied because it may retain product residues. Avoid breathing vapor or mist. Use only in a well-ventilated area. Wash hands before eating.

Storage: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Do not store above 120 ° F. Store large quantities in buildings designed and protected for storage of NFPA Class I flammable liquids. Contents under pressure. Do not expose to heat or store above 120 ° F.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Prevent build-up of vapors by opening all doors and windows to achieve cross-ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof ventilation equipment.

Respiratory Protection: A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or in any other circumstances where air purifying respirators may not provide adequate protection.

Skin Protection: Use impervious gloves to prevent skin contact and absorption of this material through the skin. Nitrile or Neoprene gloves may afford adequate skin protection.

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other protective equipment: Refer to safety supervisor or industrial hygienist for further information regarding personal protective equipment and its application.

Hygienic Practices: Wash thoroughly with soap and water before eating, drinking or smoking.

Section 9 - Physical And Chemical Properties

Vapor Density:	Heavier than Air	Odor:	Solvent Like
Appearance:	Aerosolized Mist	Evaporation Rate:	Faster than Ether
Solubility in H2O:	Miscible	Freeze Point:	N.D.
Specific Gravity:	0.877	PH:	N.A.
Physical State:	Liquid		

(See section 16 for abbreviation legend)

Section 10 - Stability And Reactivity

Conditions To Avoid: Avoid temperatures above 120 ° F. Avoid all possible sources of ignition.

Incompatibility: Incompatible with strong oxidizing agents, strong acids and strong alkalies.

Hazardous Decomposition: When heated to decomposition, it emits acrid smoke and irritating fumes. By open flame, carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur under normal conditions.

Stability: This product is stable under normal storage conditions.

Section 11 - Toxicological Information

Chemical Name	LD50	LC50

Liquefied Petroleum Gas	N.E.	N.E.
Xylene	4300 mg/kg (Rat, Oral)	5000 ppm (Rat, Inhalation, 4Hr)
Magnesium Silicate	N.E.	TCLo: 11 mg/m3 (Inhalation)
Toluene	636 mg/kg (Rat, Oral)	>26700 ppm (Rat, Inhalation, 1Hr)
Ethylbenzene	3500 mg/kg (Rat, Oral)	N.E.
Titanium Dioxide	>7500 mg/kg (Rat, Oral)	N.E.
Basic Zinc Molybdate	N.E.	N.E.

Section 12 - Ecological Information

Ecological Information: Product is a mixture of listed components.

Section 13 - Disposal Information

Disposal Information: Dispose of material in accordance to local, state and federal regulations and ordinances. Do not allow to enter storm drains or sewer systems.

Section 14 - Transportation Information

	Domestic (USDOT)	International (IMDG)	Air (IATA)
Proper Shippping Name:	Consumer Commodity	Aerosols	Aerosols
Hazard Class:	ORM-D	2.1	2.1
UN Number:	N.A.	UN1950	UN1950
Packing Group:	N.A.	N.A.	N.A.
Limited Quantity:	No	Yes	Yes

Section 15 - Regulatory Information

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

IMMEDIATE HEALTH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD, PRESSURIZED GAS HAZARD

SARA Section 313:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS Number
Xylene	1330-20-7
Toluene	108-88-3
Ethylbenzene	100-41-4
Basic Zinc Molybdate	61583-60-6

Toxic Substances Control Act:

Listed below are the substances (if any) contained in this product that are subject to the reporting requirements of TSCA 12(B) if exported from the United States:

U.S. State Regulations: As follows -

New Jersey Right-to-Know:

The following materials are non-hazardous, but are among the top five components in this product.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY

Pennsylvania Right-to-Know:

The following non-hazardous ingredients are present in the product at greater than 3%.

Chemical Name	CAS Number
Alkyd Resin	PROPRIETARY

International Regulations: As follows -

CANADIAN WHMIS:

This MSDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

CANADIAN WHMIS CLASS: AB5 D2A D2B

Section 16 - Other Information

NFPA Ratings:
Health: 2 Flammability: 4 Instability: 0

VOLATILE ORGANIC COMPOUNDS, g/l: 595

REASON FOR REVISION: Regulatory Update

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

Rust-Oleum Corporation believes, to the best of its knowledge, information and belief, the information contained herein to be accurate and reliable as of the date of this material safety data sheet. However, because the conditions of handling, use, and storage of these materials are beyond our control, we assume no responsibility or liability for personal injury or property damage incurred by the use of these materials. Rust-Oleum Corporation makes no warranty, expressed or implied, regarding the accuracy or reliability of the data or results obtained from their use. All materials may present unknown hazards and should be used with caution. The information and recommendations in this material safety data sheet are offered for the users' consideration and examination. It is the responsibility of the user to determine the final suitability of this information and to comply with all applicable international, federal, state, and local laws and regulations.

valspar

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product ID:	**400.0002006.076**	
Product Name:	T-6 SWIFT RED	6U
Product Use:	Paint product.	
Print date:	18/Mar/2010	
Revision Date:	26/Jan/2010	

Company Identification
The Valspar Corporation - Architectural Coatings Division
1000 Lake Road
Medina, OH 44256

Manufacturer's Phone: 1-330-725-4511

24-Hour Medical Emergency Phone: 1-888-345-5732

2. HAZARDS IDENTIFICATION

Primary Routes of Exposure:
Inhalation
Ingestion
Skin absorption

Eye Contact:

- Severe eye irritation

Skin Contact:

- Dermatitis
- May cause defatting of the skin.
- Causes skin irritation.
- May cause sensitization by skin contact.

Ingestion:

- Irritation of the mouth, throat, and stomach.
- Harmful if swallowed.
- Aspiration hazard if swallowed - can enter lungs and cause damage.

Inhalation:

- Causes respiratory tract irritation.
- Harmful by inhalation.
- Asphyxia
- May cause damage to nasal and respiratory passages.
- May cause sensitization by inhalation.

Acute Other Health *Effects:*
- Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- May cause frostbite

Target Organ and Other Health Effects:
- Cardiac arrhythmias
- Causes headache, drowsiness or other effects to the central nervous system.
- Liver injury may occur.
- Kidney injury may occur.
- Blood disorders

This product contains ingredients that may contribute to the following potential chronic health effects:
- Notice: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.
- Possible sensitization.

Carcinogens:
- Possible cancer hazard. Contains material which may cause cancer based on animal data.

3. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS

Ingredient Name CAS-No.	Approx. Weight %	Chemical Name
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	Acetone
PROPANE 74-98-6	15 - 20	Propane
METHYL ISOBUTYL KETONE 108-10-1	10 - 15	Methylisobutyl ketone
BUTANE 106-97-8	5 - 10	Butane
BUTYL ACETATE 123-86-4	5 - 10	n-Butyl acetate
ETHYL 3-ETHOXYPROPIONATE 763-69-9	1 - 5	Ethyl 3-ethoxypropionate
PROPYLENEGLYCOL MONOMETHYL ETHER ACETATE 108-65-6	1 - 5	2-methoxy-1-methylethyl acetate
COBALT OCTOATE 136-52-7	.1 - 1	Hexanoic acid, 2-ethyl-, cobalt(2+) salt

If this section is blank there are no hazardous components per OSHA guidelines.

4. FIRST AID MEASURES

Eye Contact:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. If medical assistance is not immediately available, flush an additional 15 minutes. Get medical attention immediately.

Skin Contact:
Remove contaminated clothing and shoes. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention, if symptoms develop or persist.

Ingestion:
Rinse mouth with water. Give one or two glasses of water. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Inhalation:
Move injured person into fresh air and keep person calm under observation. Get medical attention immediately. For breathing difficulties, oxygen may be necessary. If breathing stops, provide artificial respiration. Do not give direct mouth-to-mouth resuscitation if inhaled. To protect rescuer, use air-viva, oxy-viva or one-way mask. Resuscitate in a well-ventilated area.

Medical conditions aggravated by exposure:
Any respiratory or skin condition.

5. FIRE FIGHTING MEASURES

Flash point (Fahrenheit):	-31
Flash point (Celsius):	-35
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined
Sensitivity to impact:	no
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.
Hazardous combustion products:	See Section 10.

Unusual fire and explosion hazards:
None known.

Extinguishing media:
Carbon dioxide, dry chemical, foam and/or water fog.

Fire fighting procedures:
Firefighters should be equipped with self-contained breathing apparatus and turn out gear. Keep containers and surroundings cool with water spray.

6. ACCIDENTAL RELEASE MEASURES

Action to be taken if material is released or spilled:
Ventilate the area. Avoid breathing dust or vapor. Use self-containing breathing apparatus or airmask for large spills in a confined area. Wipe, scrape or soak up in an inert material and put in a container for disposal. See section 7, "Handling and Storage", for proper container and storage procedures. Remove all sources of ignition. Soak up with inert absorbent material. Use only non-sparking tools. Avoid contact with eyes.

7. HANDLING AND STORAGE

Precautions to be taken in handling and storage:
Keep away from heat, sparks and open flame. - No smoking. Keep container closed when not in use. Do not store above 120 degrees F. (49 degrees C). Based on flash point and vapor pressure, suitable storage should be provided in accordance with OSHA regulation 1910.106, Ontario OH&S regulation 851 section 22. Empty containers may contain product residue, including flammable or explosive vapors. Do not cut, puncture or weld on or near container. All label warnings must be observed until the container has been commercially cleaned or reconditioned. If the product is used near or above the flashpoint, an ignition hazard may be present. Activities, uses, or operations which liberate vapor (such as mixing or free fall of liquids) may also present an ignition hazard. Please ensure containers and other interconnected equipment are properly bonded and grounded at all times.

8. PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE CONTROLS

Personal Protective Equipment

Eye and face protection:
Chemical goggles, also wear a face shield if splashing hazard exists.

Skin protection:
Appropriate chemical resistant gloves should be worn.

Other Personel Protection Data:
To prevent skin contact wear protective clothing covering all exposed areas.

Respiratory protection:
If exposure cannot be controlled below applicable limits, use the appropriate NIOSH approved respirator such as an air purifying respirator with organic vapor cartridge and dust/mist filter. Consult the respirator manufacturer's literature to ensure that the respirator will provide adequate protection. Read and follow all respirator manufacturer's instructions.

Ventilation
Use only in well-ventilated areas. Ensure adequate ventilation, especially in confined areas. Ovens used for curing should contain a fresh air purge to prevent vapours from accumulating and creating a possible explosive mixture. Where the product is used in a hazardous classified area, use explosion-proof electrical/ventilating/lighting/equipment.

Exposure Guidelines

OSHA Permissible Exposure Limits (PEL's)

Ingredient Name CAS-No.	Approx. Weight %	TWA (final)	Ceilings limits (final)	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	1000 ppm TWA 2400 mg/m^3 TWA		
PROPANE 74-98-6	15 - 20	1000 ppm TWA 1800 mg/m^3 TWA		
METHYL ISOBUTYL KETONE 108-10-1	10 - 15	100 ppm TWA 410 mg/m^3 TWA		
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA 710 mg/m^3 TWA		

ACGIH Threshold Limit Value (TLV's)

Ingredient Name CAS-No.	Approx. Weight %	TWA	STEL	Ceiling limits	Skin designations
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	500 ppm TWA	750 ppm STEL		
PROPANE 74-98-6	15 - 20	1000 ppm TWA			
METHYL ISOBUTYL KETONE 108-10-1	10 - 15	50 ppm TWA	75 ppm STEL		
BUTANE 106-97-8	5 - 10	1000 ppm TWA			
BUTYL ACETATE 123-86-4	5 - 10	150 ppm TWA	200 ppm STEL		
COBALT OCTOATE 136-52-7	.1 - 1	0.02 mg/m^3 Co			

9. PHYSICAL PROPERTIES

Odor:	Normal for this product type.
Physical State:	Aerosol
pH:	not determined
Vapor pressure:	NOT DETERMINED mmHg @ 68°F (20°C)
Vapor density (air = 1.0):	5.0
Boiling point:	not determined
Solubility in water:	not determined
Coefficient of water/oil distribution:	not determined
Density (lbs per US gallon):	6.34
Specific Gravity:	.76
Evaporation rate (butyl acetate = 1.0):	5.6
Flash point (Fahrenheit):	-31
Flash point (Celsius):	-35
Lower explosive limit (%):	1
Upper explosive limit (%):	13
Autoignition temperature:	not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions.
Conditions to Avoid:	Heat.
Incompatibility:	Strong oxidizing agents
Hazardous Polymerization:	None anticipated.
Hazardous Decomposition Products:	Carbon monoxide and carbon dioxide.
Sensitivity to static discharge:	Subject to static discharge hazards. Please see bonding and grounding information in Section 7.

11. TOXICOLOGICAL INFORMATION

Ingredient Name CAS-No.	Approx. Weight %	NIOSH - Selected LD50s and LC50s
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35	= 5800 mg/kg Oral LD50 Rat
PROPANE 74-98-6	15 - 20	= 658 mg/L Inhalation LC50 Rat 4 h
METHYL ISOBUTYL KETONE 108-10-1	10 - 15	= 2080 mg/kg Oral LD50 Rat = 8.2 mg/L Inhalation LC50 Rat 4 h > 16000 mg/kg Dermal LD50 Rabbit
BUTANE 106-97-8	5 - 10	= 658 mg/L Inhalation LC50 Rat 4 h
BUTYL ACETATE 123-86-4	5 - 10	= 10768 mg/kg Oral LD50 Rat = 390 ppm Inhalation LC50 Rat 4 h > 17600 mg/kg Dermal LD50 Rabbit
ETHYL 3-ETHOXYPROPIONATE 763-69-9	1 - 5	= 10 mL/kg Dermal LD50 Rabbit = 3200 mg/kg Oral LD50 Rat
PROPYLENEGLYCOL MONOMETHYL ETHER ACETATE 108-65-6	1 - 5	= 8532 mg/kg Oral LD50 Rat > 5000 mg/kg Dermal LD50 Rabbit

Mutagens/Teratogens/Carcinogens:

Possible cancer hazard. Contains material which may cause cancer based on animal data.

The International Agency For Research On Cancer (IARC) has determined that Cobalt and Cobalt Compounds are substances that are possibly carcinogenic to humans (IARC group 2B).

Ingredient Name CAS-No.	Approx. Weight %	IARC Group 1 - Human Evidence	IARC Group 2A - Limited Human Data	IARC Group 2B - Sufficient Animal Data
COBALT OCTOATE 136-52-7	.1 - 1			Monograph 52 [1991]

Ingredient Name CAS-No.	Approx. Weight %	NTP Known Carcinogens	NTP Suspect Carcinogens	NTP Evidence of Carcinogenicity
METHYL ISOBUTYL KETONE 108-10-1	10 - 15			male rat-some evidence; female rat-equivocal evidence; male mice-some evidence; female mice-some evidence

Ingredient Name CAS-No.	Approx. Weight %	OSHA - Hazard Communication Carcinogens	OSHA - Specifically Regulated Carcinogens	ACGIH Carcinogens
COBALT OCTOATE 136-52-7	.1 - 1	Present		Group A3 Confirmed animal carcinogen with unknown relevance to humans.

12. ECOLOGICAL DATA

No information on ecology is available.

13. DISPOSAL CONSIDERATIONS

Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

U.S. Department of Transportation
UN ID Number (msds): CONCOM
Proper Shipping Name: CONSUMER COMMODITY ORM-D

U.S. Highway & Rail Shipments
The supplier may apply one of the following exceptions: Combustible Liquid, Consumer Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

Reportable Quantity Description:

International Air Transport Association (IATA):
UN ID Number (msds): UN1950
Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2

International Maritime Organization (IMO):
IMO UN/ID Number (msds): UN1950

Proper Shipping Name: AEROSOLS, FLAMMABLE
Hazard Class: 2

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

Ingredient Name CAS-No.	Approx. Weight %	SARA 302	SARA 313	CERCLA RQ in lbs.
DIMETHYL KETONE-EXEMPT SOLVENT 67-64-1	30 - 35			5000
METHYL ISOBUTYL KETONE 108-10-1	10 - 15		form R reporting required for 1.0% de minimis concentration	5000
BUTYL ACETATE 123-86-4	5 - 10			5000
COBALT OCTOATE 136-52-7	.1 - 1		YES	1

SARA 311/312 Hazard Class:

Acute: yes
Chronic: yes
Flammability: yes
Reactivity: no
Sudden Pressure: yes

U.S. STATE REGULATIONS:

Right to Know:
The specific chemical identity of a component may be withheld as a trade secret under 34 Pennsylvania Code, Chapter 317.

Pennsylvania Right To Know:

PROPANE 74-98-6
BUTANE 106-97-8
BUTYL ACETATE 123-86-4
PROPYLENEGLYCOL MONOMETHYL ETHER ACETATE 108-65-6
ETHYL 3-ETHOXYPROPIONATE 763-69-9
METHYL ISOBUTYL KETONE 108-10-1
DIMETHYL KETONE- EXEMPT SOLVENT 67-64-1

Additional Non-Hazardous Materials

PROPRIETARY RESIN Trade Secret

Rule 66 status of product Not photochemically reactive.

INTERNATIONAL REGULATIONS - Chemical Inventories

US TSCA Inventory:
All components of this product are in compliance with U.S. TSCA Chemical Substance Inventory Requirements.

Canada Domestic Substances List:
All components of this product are listed on the Domestic Substances List.

16. OTHER INFORMATION

16. OTHER INFORMATION

HMIS Codes

Health:	2*
Flammability:	4
Reactivity:	1
PPE:	X - See Section 8 for Personal Protective Equipment (PPE).

Abbreviations:

OSHA - Occupational Safety and Health Administration, IARC - International Agency for Research on Cancer, NIOSH - National Institute of Occupational Safety and Health, NTP - National Toxicology Program, ACGIH - American Conference of Governmental Industrial Hygienists, SCAQMD - South Coast Air Quality Management District, TSCA - Toxic Substances Control Act, IATA - International Air Transport Association, IMO - International Maritime Organization, DOT - Department of Transportation, NA - Not applicable, NOT ESTAB - Not established, N.A.V. - Not available, RQ - Reportable quantity, WT - Weight, MG/CU M - Milligrams per cubic meter, G/L - Grams per liter, MM - Millimeters, MPPCF - Millions of particles per cubic foot, PPM - parts per million, PPT - parts per thousand, TCC/PM - Tag closed cup / Pensky-Martens, PB - Lead, PEL - Permissible exposure level, TWA - Time Weighted Average, STEL - Short term exposure limit, C - Celsius, F - Fahrenheit.

Disclaimer:

The data on this sheet represent typical values. Since application variables are a major factor in product performance, this information should serve only as a general guide. Valspar assumes no obligation or liability for use of this information. UNLESS VALSPAR AGREES OTHERWISE IN WRITING, VALSPAR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. VALSPAR WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. Your only remedy for any defect in this product is the replacement of the defective product, or a refund of its purchase price, at our option. This MSDS contains additional information required by the state of Pennsylvania.

Preparation Information:

Prepared By:	Regulatory Affairs Department
Print date:	18/Mar/2010
Revision Date:	26/Jan/2010

MATERIAL SAFETY DATA SHEET
TUF-LUBE™ COUPLING GREASE

SECTION I – PRODUCT INFORMATION

Distributor's name:	Allied Rubber & Gasket Company, Inc. - ARGCO 2610 Commerce Way Vista, Ca 92081
In case of emergency:	Contact your local poison control center
For information call:	(800) 854-1015
Date prepared:	11/30/2011
Product name:	Tuf-Lube™ Coupling Grease

SECTION II – HAZARDOUS INGREDIENTS

OSHA Status:	Contains no "hazardous chemicals" as defined by OSHA Hazard Communication Standard, 29CFR, 1910.1200
TSCA Status:	All ingredients listed.
CERCLA:	Not reportable.
SARA Title III:	No reportable ingredients.
Sections 302,311,312,313:	No reportable ingredients.
RCRA Status:	Not regulated.

Ingredient	CAS #	Range
Water	7732-18-5	4-10 %
Potassium Oleate	143-18-0	60-92 %
Glycol Esters	57-55-6	1-6 %
Reinforcing Pigment	12001-26-2	4-10 %

SECTION III – PHYSICAL DATA

Boiling point:	Not applicable
Vapor Density:	Not applicable
Vapor pressure:	Not applicable
Solubility in Water:	Appreciable
Appearance & odor:	Tan colored paste – mild odor
Specific gravity (H2O = 1):	1.06
Melting point:	Not applicable
Evaporation Rate:	Not applicable

SECTION IV – FIRE AND EXPLOSION DATA

Flash Point:	None
Flammable Limits:	Not applicable
Extinguishing Media:	Not applicable
Special Fire Fighting Method:	Not applicable
Unusual fire & explosion hazards:	None
LEL:	Not applicable
UEL:	Not applicable

SECTION V – HEALTH HAZARD DATA

Emergency Overview:	Non-toxic; basically non-hazardous.
Eye Contact:	May cause slight irritation.
Skin Contact:	May cause slight irritation to persons sensitive to soap products.
Inhalation:	Non-hazardous by inhalation.
Ingestion:	Unlikely to occur.

First Aid Measures

Note to Physician:	Treat as soap irritation.
Eyes:	Flush with water for 15 minutes , if irritation persists get medical aid.
Skin:	Wash with soap and water , if irritation persists get medical aid.

SECTION VI – REACTIVITY DATA

Stability:	Stable
Conditions to avoid:	None
Hazardous Decomposition or Byproducts:	None known.
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Not applicable
Materials to Avoid:	None

SECTION VII – PRECAUTIONS FOR SAFE HANDLING & USE

HMIS/NFPA Health – 0 Fire – 0 Reactivity – 0 Personal Protection - B

Steps to be taken in case material is released or Spilled:	Wipe up with paper towels or cloth and place in appropriate containers for disposal. Material is non-hazardous waste.
Storage Temperature:	Ambient
Handling:	No special handling or storage procedures required.
Disposal Considerations:	In accordance with federal, state, and local regulations.

SECTION VIII – SPECIAL PROTECTION INFORMATION

Respiratory Protection:	None required
Engineering Controls:	None required.
Gloves:	Recommended to prevent possible dermal irritation.
Safety Glasses:	Recommended to prevent possible eye irritation.
Other protective clothing or equipment:	None required

SECTION IX - TRANSPORTATION INFORMATION

Product is not regulated.

Disclaimer

The information contained herein is accurate and reliable as of the date issued to the best of the manufacturer's knowledge. ARGCO *doesn't warrant or guarantee its accuracy or reliability and shall not be liable for any loss or damage arising from the use thereof. It is the user's responsibility to satisfy itself that the information offered for its consideration is suitable for its particular use.*

END OF MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet

1 - Chemical Product and Company Identification

Manufacturer: WD-40 Company Address: 1061 Cudahy Place (92110) P.O. Box 80607 San Diego, California, USA 92138 –0607 Telephone: Emergency only: 1-888-324-7596 (PROSAR) Information: 1-888-324-7596 Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)	Chemical Name: Organic Mixture Trade Name: WD-40 Aerosol Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion MSDS Date Of Preparation: 6/8/12

2 – Hazards Identification

Emergency Overview:
DANGER! Flammable aerosol. Contents under pressure. Harmful or fatal if swallowed. If swallowed, may be aspirated and cause lung damage. May cause eye irritation. Avoid eye contact. Use with adequate ventilation. Keep away from heat, sparks and all other sources of ignition.

Symptoms of Overexposure:
Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.
Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.
Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.
Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.
Chronic Effects: None expected.
Medical Conditions Aggravated by Exposure: Preexisting eye, skin and respiratory conditions may be aggravated by exposure.

Suspected Cancer Agent:
Yes No X

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent
Aliphatic Hydrocarbon	64742-47-8	45-50
Petroleum Base Oil	64742-58-1 64742-53-6 64742-56-9 64742-65-0	<25
LVP Aliphatic Hydrocarbon	64742-47-8	12-18
Carbon Dioxide	124-38-9	2-3
Non-Hazardous Ingredients	Mixture	<10

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.
Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.
Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

5 – Fire Fighting Measures

Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.
Special Fire Fighting Procedures: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.
Unusual Fire and Explosion Hazards: Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back.

6 – Accidental Release Measures

Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area. Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.
Storage: Store in a cool, well-ventilated area, away from incompatible materials. Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m3 TWA, 10 mg/m3 STEL ACGIH TLV 5 mg/m3 TWA OSHA PEL
LVP Aliphatic Hydrocarbon	1200 mg/m3 TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA (OSHA/ACGIH), 30,000 ppm STEL (ACGIH)
Non-Hazardous Ingredients	None Established

The Following Controls are Recommended for Normal Consumer Use of this Product
Engineering Controls: Use in a well-ventilated area.
Personal Protection:
Eye Protection: Avoid eye contact. Always spray away from your face.
Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.
Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended
Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.
Personal Protection:
Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.
Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.
Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Boiling Point:	361 - 369°F (183 - 187°C)	Specific Gravity:	0.8 – 0.82 @ 60°F
Solubility in Water:	Insoluble	pH:	Not Applicable
Vapor Pressure:	95-115 PSI @ 70°F	Vapor Density:	Greater than 1
Percent Volatile:	70-75%	VOC:	412 grams/liter (49.5%)
Coefficient of Water/Oil Distribution:	Not Determined	Appearance/Odor	Light amber liquid/mild odor
Flash Point:	122°F (49°C) Tag Open Cup (concentrate)	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8.0%
Pour Point:	-63°C (-81.4°F) ASTM D-97	Kinematic Viscosity:	2.79-2.96cSt @ 100°F

10 – Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.
Incompatibilities: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

The oral toxicity of this product is estimated to be greater than 5,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard. None of the components of this product is listed as a carcinogen or suspected carcinogen or is considered a reproductive hazard.

12 – Ecological Information

No data is currently available.

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: Consumer Commodity, ORM-D
After 1/1/2014 UN1950, Aerosols, 2.1 Ltd. Qty (Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)
IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY
ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1 NOTE: WD-40 does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:
CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.
SARA TITLE III:
Hazard Category For Section 311/312: Acute Health, Fire Hazard, Sudden Release of Pressure
Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None
Section 302 Extremely Hazardous Substances (TPQ): None
EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not contain chemicals regulated under California Proposition 65.
VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.
Canadian Environmental Protection Act: One of the components is listed on the NDSL. All of the other ingredients are listed on the Canadian Domestic Substances List or exempt from notification.
Canadian WHMIS Classification: Class B-5 (Flammable Aerosol)
This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

16 – Other Information:

HMIS Hazard Rating:
Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Reactivity – 0 (minimal hazard)

SIGNATURE: _____ TITLE: Adm. Scientific Manager

REVISION DATE: June 2012 SUPERSEDES: March 2010

A UTC Fire & Security Company

MATERIAL SAFETY DATA SHEET

Wet Chemical Solution
(Portable Fire Extinguisher Agent)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATIONS AND OF THE COMPANY UNDERTAKING

Product Name	Wet Chemical Solution (Portable Fire Extinguisher Agent)
Other Trade Names	AC-100, AC-250, Potassium Acetate, Class K
Product Description	Fire Extinguishing Agent
Manufacturer/Supplier	Badger Fire Protection
Address	944 Glenwood Station Lane, Suite 303 Charlottesville, VA 22901 USA
Phone Number	(434)-964-3200
Chemtrec Number (for emergencies only)	(800) 424-9300 (703) 527-3887 (International)
Revision Date:	February 9, 2012
MSDS Date:	January 15, 2007

Safety Data Sheet according to EC directive 2001/59/EC and OSHA's Hazcom Standard (29 CFR 1910.1200)

2. HAZARDS IDENTIFICATION

EU Main Hazards
Non Hazardous Liquid

Routes of Entry
Eye contact - Inhalation - Skin contact

Carcinogenic Status
Not considered carcinogenic by NTP, IARC, and OSHA.

Target Organs
Respiratory System - Skin - Eye

Health Effects - Eyes
Contact for short periods of time may cause irritation.

Health Effects - Skin
Contact may cause mild irritation.

Health Effects - Ingestion
Ingestion is not an expected route of exposure.

Health Effects - Inhalation
May irritate the respiratory tract. May cause transient cough and shortness of breath.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Name	CAS#/Codes	Concentration	R Phrases	EU Classification
Potassium Acetate	127-08-2 EC#2048222	35-45%	None	None
Water	7732-18-5 EC#2317912	55-65%	None	None

4. FIRST AID MEASURES

Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

Skin
Wash affected area with soap and water. Obtain medical attention if irritation persists.

Ingestion
Dilute by drinking large quantities of water and obtain medical attention.

Inhalation
Move victim to fresh air. Obtain medical attention immediately for any breathing difficulty.

Advice to Physicians
Treat symptomatically.

5. FIRE - FIGHTING MEASURES

Extinguishing Media
This preparation is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep pressurized extinguishers and surroundings cool with water spray as they may rupture or burst in the heat of a fire.

Unusual Fire and Explosion Hazards
Pressurized containers may explode in heat of fire.

Protective Equipment for Fire-Fighting
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Contain and absorb using appropriate inert material. Transfer into suitable containers for disposal. Prevent skin and eye contact. Wear appropriate protective equipment. Prevent large quantities of the material from entering drains or watercourses.

7. HANDLING AND STORAGE

Pressurized extinguishers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll extinguishers. Do not drop extinguishers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the extinguisher or plastic container. Store pressurized extinguishers and plastic containers away from high heat sources. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Standards
Occupational exposure limits are listed below, if they exist.
Potassium Acetate
None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Control Measures
Use with adequate ventilation. There should be local procedures for the selection, training, inspection and maintenance of this equipment. When used in large volumes, use local exhaust ventilation.

Respiratory Protection
Not normally required.

Hand Protection
Not normally needed when used as a portable fire extinguisher. Use gloves if irritation occurs.

Eye Protection
Chemical goggles or safety glasses with side shields.

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Color	Clear or blue
Odor	Odorless
Specific Gravity	1.19 -1.24
Boiling Range/Point (°C/F)	100/212
Flash Point (PMCC) (°C/F)	Not Flammable
Solubility in Water	soluble
Vapor Density (Air = 1)	Not applicable
Vapor Pressure	Not applicable
Evaporation Rate	Not applicable

10. STABILITY AND REACTIVITY

Stability
Stable under normal conditions.

Conditions to Avoid
- Heat - High temperatures - Exposure to direct sunlight

Materials to Avoid
- Strong oxidizing agents

Hazardous Polymerization
Will not occur.

Hazardous Decomposition Products
- oxides of carbon - potassium

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Low order of acute toxicity.

11. TOXICOLOGICAL INFORMATION

Chronic Toxicity/Carcinogenicity
This product is not expected to cause long term adverse health effects.

Genotoxicity
This product is not expected to cause any mutagenic effects.

Reproductive/Developmental Toxicity
This product is not expected to cause adverse reproductive effects.

12. ECOLOGICAL INFORMATION

Mobility
No relevant studies identified.

Persistence/Degradability
No relevant studies identified.

Bio-accumulation
No relevant studies identified.

Ecotoxicity
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of container in accordance with all applicable local and national regulations. Do not cut, puncture or weld on or near to the container. No harm to the environment is expected from this preparation.

14. TRANSPORT INFORMATION

DOT CFR 172.101 Data	Not regulated
UN Proper Shipping Name	Not regulated
UN Class	None
UN Number	None
UN Packaging Group	None

15. REGULATORY INFORMATION

EU Label Information

Classification and labelling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments(2001/60/EC and 2006/8/EC)

EU Hazard Symbol and Indication of Danger.
This preparation is not classified as dangerous.

R phrases
None

S phrases
None.

15. REGULATORY INFORMATION

US REGULATIONS (Federal, State) and INTERNATIONAL CHEMICAL REGISTRATION LAWS

TSCA Listing
This product contains ingredients that are listed on or exempt from listing on the EPA Toxic Substance Control Act Chemical Substance Inventory.

EINECS Listing
All ingredients in this product are listed on the European Inventory of Existing Commercial Chemical Substances (EINECS) or are exempt from listing.

DSL/NDSL (Canadian) Listing
All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL) or are exempt from listing.

WHMIS Classification
D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

MA Right To Know Law
All components have been checked for inclusion on the Massachusetts Substance List (MSL). Those components present at or above the de minimus concentration include: none

PA Right To Know Law
This product contains the following chemicals found on the Pennsylvania Hazardous Substance List: - none

NJ Right To Know Law
This product contains the following chemicals found on the NJ Right To Know Hazardous Substance List: - none

California Proposition 65
This product does not contain materials which the State of California has found to cause cancer, birth defects or other reproductive harm.

SARA Title III Sect. 302 (EHS)
This product does not contain any chemicals subject to SARA Title III Section 302.

SARA Title III Sect. 304
This product does not contain any chemicals subject to SARA Title III Section 304.

SARA Title III Sect. 311/312 Categorization
- Immediate (Acute) Health Hazard

SARA Title III Sect. 313
This product does not contain any chemicals that are listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards - None

16. OTHER INFORMATION

HMIS Ratings
HMIS Code for Health - 1
HMIS Code for Flammability - 0
HMIS Code for Reactivity - 0
HMIS Code for Personal Protection - See Section 8

Abbreviations
N/A: Denotes no applicable information found or available
CAS#: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
OSHA: Occupational Safety and Health Administration
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
STEL: Short Term Exposure Limit
NTP: National Toxicology Program
IARC: International Agency for Research on Cancer
R: Risk
S: Safety

Prepared By: EnviroNet LLC.

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