459-836

Material Safety Data Sheet

Material Name: Fire Extinguisher with recycled Halon 1301 and Methanol **ID: KA006**

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Bromotrifluoromethane and Methanol
Product Use: Extinguishing Fires
Manufacturer Information
Kidde Aerospace
4200 Airport Drive, NW
Wilson, NC 27896

Phone: 252-246-7004

Emergency # 1-800-451-8346; 760-602-8700 (3E Company)

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
75-63-8	bromotrifluoromethane	98
67-56-1	Methyl alcohol	2

Component Related Regulatory Information
This product may be regulated, have exposure limits or other information identified as the following: Bromofluorocarbons, Bromine compounds.

Component Information/Information on Non-Hazardous Components
This product is considered to be hazardous under 29 CFR 1910.1200 (Hazard Communication). This is a controlled product under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

*** Section 3 - Hazards Identification ***

Emergency Overview
Warning. Asphyxiant. Inhalation of vapors of this product may affect the cardiovascular and central nervous system and may cause death. Skin or eye contact with the liquid will cause frostbite. Pressurized container may explode when exposed to heat or flame. May cause blindness. May be harmful if absorbed through the skin.

Potential Health Effects: Eyes
Contact with the liquid of this product will cause frostbite to the eyes.

Potential Health Effects: Skin
Contact with the liquid of this product will cause frostbite to the skin. This product contains methanol which can be absorbed though the skin and cause harmful effects.

Potential Health Effects: Ingestion
Not a likely route of entry. This product contains methanol. Ingestion of methanol may cause irregular heartbeat, headache, dizziness, visual disturbances and blindness. Prolonged exposure to methanol may cause reproductive harm and heart, kidney, liver, and nerve damage.

Potential Health Effects: Inhalation
Asphyxiant. The vapors of this product reduce oxygen available for breathing and are heavier than air. Inhalation of the vapors of the product causes central nervous system depression and affects the cardiovascular system. Symptoms include nausea, vomiting, irregular heartbeat, symptoms of drunkenness, disorientation, bluish skin color, suffocation, convulsions and possibly death. This product contains methanol. Inhalation of methanol may cause irritation, irregular heartbeat, dizziness, blood disorders and nerve damage.

HMIS Ratings: Health: 1* **Fire:** 0 **Physical Hazard:** 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes
Immediately flush eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention at once.

First Aid: Skin
Get medical attention. If frostbite or freezing occurs, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C) for at least 15 minutes. Do not use hot water.

First Aid: Ingestion
Get immediate medical attention.
First Aid: Inhalation
Get medical attention. Remove the affected person immediately to fresh air.
First Aid: Notes to Physician
Do not give epinephrine or similar drugs for treatment of overexposure.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not applicable
Upper Flammable Limit (UFL): Not applicable
Auto Ignition: Not applicable
Rate of Burning: Not applicable
Method Used: Not applicable
Lower Flammable Limit (LFL): Not applicable
Flammability Classification: Not applicable

General Fire Hazards
Pressurized Container: May explode when exposed to heat or flame. Product itself is not flammable. Decomposition of this product occurs at >850°C (>1562°F).
Hazardous Combustion Products
Hydrogen fluorides, hydrogen bromides, free bromine, carbonyl halides and oxides of carbon and nitrogen.
Extinguishing Media
Use methods for the surrounding fire.
Fire Fighting Equipment/Instructions
Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Use water to cool fire-exposed containers and to protect personnel.

NFPA Ratings: Health: 1 **Fire:** 0 **Reactivity:** 1
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures
Do not breathe in vapors. Stop the flow of material, if this is without risk. Move the cylinder to a safe and open area if the leak is irreparable.
Clean-Up Procedures
Evacuate the area promptly. Ventilate the contaminated area. Use appropriate respiratory equipment.
Evacuation Procedures
Persons not wearing appropriate protective equipment should be excluded from area of spill until clean-up has been completed. Evacuate the area promptly and keep upwind of the spilled material. Isolate the spill area to prevent people from entering.
Special Procedures
Regulations vary. Consult local authorities before disposal.

*** Section 7 - Handling and Storage ***

Handling Procedures
Do not breathe in vapors. Do not get into contact with the eyes or skin. Use with sufficient ventilation to keep employee exposure below recommended limits.
Storage Procedures
Store in accordance with all current regulations and standards. Subject to storage regulations: 29 CFR 1910.101. Keep from away incompatible substances. Do not heat above 125°F (51.6°C).

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits
bromotrifluoromethane (75-63-8)
ACGIH: 1000 ppm TWA
OSHA: 1000 ppm TWA; 6100 mg/m3 TWA
NIOSH: 1000 ppm TWA; 6100 mg/m3 TWA

Methyl alcohol (67-56-1)

ACGIH: 200 ppm TWA
250 ppm STEL
skin - potential for cutaneous absorption

OSHA: 200 ppm TWA; 260 mg/m3 TWA
250 ppm STEL; 325 mg/m3 STEL
Prevent or reduce skin absorption

NIOSH: 200 ppm TWA; 260 mg/m3 TWA
250 ppm STEL; 325 mg/m3 STEL
Potential for dermal absorption

Engineering Controls

Ventilation should effectively remove and prevent buildup of any vapors generated from the handling of this product.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear chemical goggles.

Personal Protective Equipment: Skin

The use of polyvinyl chloride (PVC) or polyvinyl alcohol (PVA) gloves are recommended.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection. If a large spill occurs, the use of a self-contained breathing apparatus (SCBA) is required.

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended. Use good industrial hygiene practices in handling this material.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Clear, colorless	**Odor:**	Slight ethereal
Physical State:	Liquefied gas	**pH:**	Neutral
Vapor Pressure:	235 psia @ 77°F (25°C)	**Vapor Density:**	5.14 (Air = 1) @ 77°F (25°C)
Boiling Point:	-72°F (-58°C)	**Melting Point:**	Not available
Solubility (H2O):	0.03 WT% @ 77°F (25°C)	**Specific Gravity:**	1.5 @ 77°F (25°C)
Percent Volatile:	100%		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal temperature and pressure. Avoid contact with open flames or temperatures above 1000°F (537°C).

Chemical Stability: Conditions to Avoid

Protect container from heat and physical damage.

Incompatibility

Liquid contact with alkali and alkaline earth metals (powdered aluminum, zinc, beryllium, etc.).

Hazardous Decomposition

Hydrogen fluorides, hydrogen bromides, free bromine, carbonyl halides and oxides of carbon and nitrogen.

Hazardous Polymerization

Will not polymerize.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Asphyxiant. The vapors of this product reduce oxygen available for breathing and are heavier than air. Inhalation of the vapors of the product causes central nervous system depression and affects the cardiovascular system. Symptoms include nausea, vomiting, irregular heartbeat, symptoms of drunkenness, disorientation, bluish skin color, suffocation, convulsions and possibly death. Skin or eye contact with the liquid will cause frostbite. *Ingestion of methanol may cause irregular heartbeat, headache, dizziness, visual disturbances and blindness.*

B: Component Analysis - LD50/LC50

bromotrifluoromethane (75-63-8)
Inhalation LC50 Rat: 84000 ppm/15M

Methyl alcohol (67-56-1)
Inhalation LC50 Rat: 64000 mg/kg/4H; Oral LD50 Rat: 5628 mg/kg; Oral LD50 Mouse: 7300 mg/kg; Dermal LD50 Rabbit: 15800 mg/kg

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Chronic Toxicity

Lung irritation and degeneration of the liver and kidneys were seen in animals exposed repeatedly by inhalation to lethal or near lethal concentrations. Causes nervous system and cardiovascular system effects. Prolonged exposure to methanol may cause reproductive harm and blood, heart, kidney, liver, and nerve damage.

*** Section 12 - Ecological Information ***

Ecotoxicity

A: General Product Information

No information available for the product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Methyl alcohol (67-56-1)

Test & Species		Conditions
96 Hr LC50 fathead minnow (28 days old)	29400 mg/L	flow-through
96 Hr LC50 rainbow trout (fingerling)	13 mg/L	
48 Hr LC50 trout	8000 mg/L	
5 min EC50 Photobacterium phosphoreum	43000 mg/L	
15 min EC50 Photobacterium phosphoreum	40000 mg/L	
25 min EC50 Photobacterium phosphoreum	39000 mg/L	

Environmental Fate

A: General Product Information

Causes harm to the ozone layer. The ozone depleting potential for bromotrifluoromethane is 10.

B: Clean Air Act (CAA) Ozone Depletors

bromotrifluoromethane (75-63-8)
Class 1: 10.0 ODP; 5600 GWP

C: United Nations Montreal Protocol Ozone Depletors

bromotrifluoromethane (75-63-8)
Annex A: 10.0 Ozone Depleting Potential (Group II)

*** Section 13 - Disposal Considerations ***

US EPA Waste Number & Descriptions

A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

Methyl alcohol (67-56-1)

RCRA: waste number U154 (Ignitable waste)

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Compressed Gas, N.O.S., 2.2, UN1956 (Mixture of Bromotrifluoromethane and Nitrogen)
UN/NA #: UN1956 **Hazard Class:** 2.2

TDG Information

Shipping Name: Compressed Gas, N.O.S., 2.2, UN1956 (Mixture of Bromotrifluoromethane and Nitrogen)
UN/NA #: UN1956 **Hazard Class:** 2.2

Note: Kidde Aerospace has party status to DOT exemption 12726 (DOT-E-12726) to ship Halon 1301 fire extinguishers as UN1044. Unless another shipper has party status to DOT-E-12726, the Halon 1301 fire extinguishers covered by this MSDS must be shipped as UN1956.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

This product is listed on the U.S. EPA TSCA Inventory and the Canadian DSL.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

bromotrifluoromethane (75-63-8)

SARA 313: 1.0 % de minimis concentration

Methyl alcohol (67-56-1)

SARA 313: 1.0 % de minimis concentration
CERCLA: 5000 lb final RQ; 2270 kg final RQ

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: Yes Reactive: No

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
bromotrifluoromethane	75-63-8	Yes	Yes	Yes	Yes	Yes	Yes
Methyl alcohol	67-56-1	Yes	Yes	Yes	Yes	Yes	Yes

Canadian WHMIS Information

A: General Product Information

This product has been classified in accordance with the Canadian Controlled Products Regulations (CPR) and this MSDS contains all of the information required by the CPR.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
bromotrifluoromethane	75-63-8	1 % (English Item 1632, French Item 1670)
Methyl alcohol	67-56-1	1 % (English Item 1012, French Item 183)

WHMIS Classification: Class A: Compressed Gas
Class D2B: Chronic Toxic Effects

Additional Regulatory Information

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
bromotrifluoromethane	75-63-8	Yes	DSL	EINECS
Methyl alcohol	67-56-1	Yes	DSL	EINECS

*** Section 16 - Other Information ***

Other Information

The information herein is presented in good faith and believed to be accurate as of the effective date given. However, no warranty, expressed or implied, is given. It is the buyer's responsibility to ensure that its activities comply with Federal, State or provincial, and local laws.

MSDS History

MSDS History New MSDS, 7/29/2004
Rev. 1.0001 on 10/13/2004
Rev. 1.0002 on 10/12/2007

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; mg/Kg = milligrams per Kilogram; mg/L = milligrams per Liter; mg/m3 = milligrams per Cubic Meter; MSHA = Mine Safety and Health Administration; NA = Not Applicable or Not Available; NIOSH = National Institute for Occupational Safety and Health; NJTSR = New Jersey Trade Secret Registry; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; TDG = Transport Dangerous Goods; TSCA = Toxic Substances Control Act; WHMIS = Workplace Hazardous Materials Information System.

Contact: Kidde Aerospace
Contact Phone: 1-252-246-7004

This is the end of MSDS # KA006

December 22, 2006

U.S. Department
of Transportation

400 Seventh Street, S.W.
Washington, D.C. 20590

Pipeline and Hazardous
Materials Safety Administration

DOT-SP 7945
(FOURTEENTH REVISION)

EXPIRATION DATE: November 30, 2010

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Pacific Scientific Company
HTL/Kin Tech Division
Duarte, California

2. PURPOSE AND LIMITATION:

a. This special permit authorizes the manufacture, marking, sale and use of a non-DOT specification cylinder conforming to all regulations applicable to DOT specification 4DS, except as specified herein, for use in transporting materials authorized under this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein.

b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce.

3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.

4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.304a(a)(1) and § 175.3 in that non-DOT specification cylinders are not authorized, except as specified herein.

5. BASIS: This special permit is based on the applications of Pacific Scientific Company dated July 31, 2006, submitted in accordance with § 107.105 and the public proceeding thereon, and an application dated December 20, 2006 submitted in accordance with § 107.109.

§ 178.47(f) *Wall thickness.*

Minimum wall thickness for any cylinder shall be 0.040 inch. Minimum wall thickness shall be such that the wall stress does not exceed 45,000 pounds per square inch, at the marked service pressure.

(1) Calculation for sphere must be made by the formula:

$$S = 0.25(PD/tE)$$

where:

S = Wall stress in pounds per square inch.
P = Service pressure, psig.
D = Outside diameter, inches.
t = Minimum wall thickness, inches.
E = 0.85 (provides 85 percent weld efficiency factor which must be applied in the girth weld area and heat affected zone which zone shall extend a distance of 6 times wall thickness from center of weld); E = 1.0 (for all other areas).

(2) Calculation for a cylinder must be made by the formula:

$$S = P(1.3D^2 + 0.4d^2) / (D^2 - d^2)$$

where:

S = Wall stress in pounds per square inch.
P = Service pressure, psig.
D = Outside diameter, inches.
d = Inside diameter, inches.

§ 178.47(g) *Heat treatment.*

Cylinders may be stress relieved or annealed for forming. Welded cylinder shall be stress relieved at a temperature of 900 °F ± 25 °F after process treatment and before hydrostatic test.

permits and Approvals for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the package is manufactured under this special permit. It must be made available to a DOT representative upon request.

f. The cylinder must be shipped in strong outside packagings in accordance with § 173.301(a)(9). The pressure vessels transported under this special permit may include properly approved actuating cartridges (Division 1.4C or 1.4S) installed in the discharge outlet without changing the classification of Division 2.2, provided the aggregate quantity of deflagrating (propellant) explosives does not exceed 3.2 grams per cylinder cartridge.

g. Cylinders are for aircraft use only.

h. Packages specified herein marked "DOT SP 5861" prior to March 20, 1976, or "DOT-E 5861" prior to June 1, 1978, and which meet the requirements of the edition of DOT SP 5861 or DOT-E 5861 in effect at the time of manufacture, may be transported under the terms of this special permit.

i. Packagings permanently marked "DOT-E 7945", prior to October 1, 2007 may continue to be used under this special permit for the remaining service life of the packaging or until the special permit is no longer valid. Packagings marked on or after October 1, 2007 must be marked "DOT-SP 7945".

j. Shipping papers displaying "DOT-E 7945" may continue to be used until October 1, 2007 provided the special permit remains valid.

k. A copy of the inspector's report specified in § 178.47-23 on the first lot of each design of cylinders produced with a service pressure greater than 900 psig must be submitted to the Office of Hazardous Materials Special permits and Approvals (OHMEA) prior to initial shipment.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle, rail freight, cargo vessel, cargo aircraft only, and passenger-carrying aircraft.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each cargo vessel, aircraft or motor vehicle used to transport packages covered by this special

for Hazardous Materials Safety -- OHMSPA, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:

for Robert A. McGuire
Associate Administrator
for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Washington, D.C. 20590. Attention: PHH-31.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: CHH/AM

PACIFIC SCIENTIFIC

Material Safety Data Sheet

RECYCLED HALON 1301/WITH NITROGEN

SECTION I. IDENTIFICATION

Recycler's/Manufacturer's Name	PACIFIC SCIENTIFIC
Address	1800 Highland Ave Duarte, California 91010
Emergency Phone Number	Infotrack 1 (800) 535-5053
Chemical Name	Trifluorobromomethane/with Nitrogen
Synonyms	Halon 1301 Bromotrifluoromethane Trifluoromethyl Bromide Nitrogen
CAS Numbers	75-63-8 and 7727-37-9
Chemical Family	Halogenated Hydrocarbon and Inert gas
Chemical Formula	CF_3Br and N2
Molecular Weight	148.9
Issued	June 03, 2005
Supersedes	November 02, 1995

SECTION II. INFORMATION ON COMPONENTS/INGREDIENTS

Components	CAS Number Percentage
Trifluorobromomethane	75-63-8 <90%
Nitrogen	7727-37-9 <.01%

SECTION III. PHYSICAL DATA

Boiling Point	-57.8 ~C (-71 .95 ^{0}F)
Vapor Pressure at 25 ^{0}C (77 ^{0}F)	235 psia
Vapor Density (Air = 1)	5.14 at 25 cc (77 ^{0}F)
Volatility, Vol. %	100 %
Solubility in H_20	0.03 % by weight at 25 ^{0}C (77 ^{0}F)
Appearance/Odor	Colorless gas with slight odor
Specific Gravity (H_20 = 1)	1.54 at 25 ^{0}C (77 ^{0}F)

SECTION IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point	Non-flammable
Flammability Limits	Not applicable
LEL	Not applicable
UEL	Not applicable
Extinguishing Media	Halon 1301 and nitrogen is a fire extinguishing agent. Use water to cool fire-exposed cylinders as they may rupture when exposed to heat.
Special Fire Fighting Precautions	Self-contained breathing apparatus and protective clothing should be worn when re-entering unventilated fire areas where the product has been used.
Unusual Fire and Explosion Hazards	When Halon 1301 is discharged onto a fire, it decomposes above 1560 ^{0}F (850 ^{0}C) releasing hydrogen fluoride, hydrogen bromide, bromine, and small amounts of carbonyl fluoride, and carbonyl bromide. These decomposition products, although harmful if inhaled, are easily detected; only a few parts per million in air cause an unpleasant acrid odor which acts as a warning to personnel.

SECTION V. REACTIVITY

Chemical Stability	Stable
Conditions to Avoid	None known
Incompatibly/Materials to Avoid	Active metals, fires of metal hydrides, and materials containing own oxygen
Decomposition Products	Hydrogen fluoride, hydrogen bromide
Hazardous Polymerization	Will not occur
Polymerization Conditions to Avoid	None

SECTION VI. SPILLS AND LEAK PROCEDURES

Accidental Leaks or Spills	Evacuate area. Wear protective gear when turning off gas source. Before re-entry, ventilate area, especially low or enclosed places where heavy vapors might collect.
Waste Disposal Considerations	Dispose of in accordance with all Local, State, and Federal regulations. In some regions, discharge for non-fire related events is prohibited. Unused product should be returned for recycling to Pacific Scientific, Duarte, California.

SECTION VII. HEALTH HAZARD DATA

Route of Exposure	Inhalation, skin contact
Potential Health Effects	INHALATION: Overexposure may cause central nervous system depression such as dizziness, confusion, incoordination, drowsiness or unconsciousness. This material may cause heightened sensitivity to circulating epinephrine (adrenaline) compounds resulting in irregular heart beats and sometimes death. SKIN/EYE CONTACT: Evaporation of Halon 1301 on the skin/eye may cause a chilling sensation or even frostbite. Significant skin permeation and subsequent systemic toxicity appears unlikely.
Toxicity Data	inhalation .rat ALC (15 minute); 83.2% Canine Cardiac NOAEL = 5.0% Canine Cardiac LOAELt 7.5%
Carcinogenicity	Not listed by ARC, OSHA or ACGIH as a carcinogen
Exposure Limits	OSHA PEL: 1000 ppm, 6100 mg/n,^{3} ACGIH TLV: 1000 ppm, 6100 mg/n,^{3} NIOSH IDLH: 50,000 ppm
Overexposure Effects	Central nervous system depression and/or heart irregularities
Erriergency/First Aid Procedures	INHALATION: Remove to fresh air immediately; keep person calm. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call physician. Administration of epinephrine (adrenaline) is contraindicated in the treatment of overexposure to Halon 1301. SKIN CONTACT: Immediately flush area with large amount of lukewarm, not hot, water, If persistent redness, itching, or burning sensation exists, seek medical attention. EYE CONTACT: Immediately flush affected eye(s) with lukewarm, not hot, water for at least 15 minutes. Consult a physician.

SECTION VIII. SPECIAL PROTECTION/CONTROL MEASURES

Respiratory Protection	Not normally needed if controls are adequate. If needed, use MSHA/NIOSH approved respirator for organic vapors. For high concentrations, confined areas, and oxygen-deficient atmospheres, wear air-supplied mask or self-contained breathing apparatus.

NOAEL - No Observable Adverse Effect Level

Ventilation	Ventilate low-lying areas, such as sumps or pits where dense vapors may collect. Use local exhaust to control exposures.
Protective Gloves	Lined butyl gloves
Eye Protection	Chemical splash goggles when handling liquid.
Other Protective Equipment	None required
Handling and Storage Procedures	Store cylinders in cool place, below 125 ^{0}F Avoid cylinder damage. Limit exposure to vapors.

SECTION IX. SHIPPING/TRANSPORTATION INFORMATION

DOT Shipping Name	Compressed Gases NOS or Fire Extinguisher
Hazard Class	Non-flammable gas, 2.2
DOT/IMO Label	Non-flammable gas, 2.2
UN Number	1956 or 1044
Reportable Quantity (RQ)	Not established
Packaging Size	Packaged to customer specification in compressed gas cylinders.

SECTION X. ADDITIONAL INFORMATION

SARA/TITLE III HAZARD CATEGORIES AND LISTS	This chemical is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act or 1986, and 40 CFR Part 372
Chronic Health	No
Acute Health	Yes
Fire Hazard	No
Pressure Hazard	Yes
Reactivity Hazard	No
Extremely Hazardous Substance	No
CERCLA Hazardous Substance	No
Toxic Chemicals	No

MSDS Preparer:	Nolan Kim
Phone Number of Preparer	626-359-9317/305-477-4711

The above information is believed to be correct and the most current information available. It represents the best judgment for proper use and handling of this product under normal conditions. Any use of the product which is not in conformance with this MSDS or which involves using the product in combination with any other product or any other process is the responsibility of the user.