



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 (800) 424-9300
(for emergencies only) (703) 527-3887 (International)
Revision Date: February 9, 2009
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



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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.



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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



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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.



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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/NDL (Canadian) Listing

All ingredients in this product are listed on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDL) 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.



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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

IARC: International Agency for Research on Cancer

R: Risk

S: Safety



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16. OTHER INFORMATION

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.
