



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Halotron® I
 Other Identifiers: HCFC Blend B, Halotron® I Pre-Sat Base
 Product Code(s): CH891/892
 Model Code(s) for Extinguishers: 384, 385, 386, 394, 397, 398, 673, 674, 675
 Recommended Use: Fire suppression agent, liquid concentrate.
 Manufacturer: AMEREX CORPORATION
 Internet Address: www.amerex-fire.com
 Address: 7595 Gadsden Highway, P.O. Box 81
 Trussville, AL 35173-0081
 Company Telephone: (205) 655-3271
 E-mail Address: info@amerex-fire.com
 Emergency Contacts: Chemtrec 1(800) 424-9300 or
 (703) 527-3887
 Revised: March 7, 2019

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: None	None	None
Skin Corrosion/Irritation: None	None	None
Skin Sensitization: None	None	None
Eye: Category 2B	None	Warning
STOT (Single Exposure) – Category 1 (CNS, Liver); Category 2 (Heart)	None	Danger Warning
STOT (Repeated Exposure) – Category 1 (Liver)	None	Danger
Carcinogen: None	None	None

GHS – Label Symbol(s):



If Pressurized: Gas Under Pressure



GHS – Signal Word(s):

Warning
Danger (STOT-Single Exposure; CNS, Liver)
(STOT-Repeated Exposure; Liver)

Other Hazards Not Resulting in Classification: Hazardous to the aquatic environment (Acute);
Hazardous to the aquatic environment (Chronic)

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H229	*- Contents under pressure; may explode if heated.
Health	H320	Causes eye irritation.
	336	May cause drowsiness and dizziness.
	370	Causes damage to organs.
	372	Causes damage to organs through prolonged or repeated exposure.
Environmental	H402	Harmful to aquatic life.
	412	Harmful to aquatic life with long-lasting effects.
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P260	Do not breathe dust/fumes/gas/mist/vapours/spray.
	264	Wash skin thoroughly after handling
	270	Do not eat, drink or smoke when using this product.
	273	Avoid release to the environment.
Response	P312	Call a doctor if you feel unwell.
	321	Specific treatment (see Section 4. First Aid Measures).
	304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	308+311	If exposed or concerned: Call a POISON CENTER/ doctor.
	305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
	337+313	If eye irritation persists get medical advice/attention.
Storage	P402	Store in dry place.
	412	Do not expose to temperatures exceeding 50 °C/122 °F
	410+403	*- Protect from sunlight. Store in well-ventilated place.
Disposal	P501	Dispose of contents through a licensed disposal company. Contaminated container should be disposed of as unused product.

*- If under pressure

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	EC No.	REACH Reg. No.	CAS-No.	Weight %
2,2-Dichloro-1,1,1-trifluoroethane	206-190-3	NA	206-190-3	>93%
Gas Mixture (Proprietary)	NA	NA	NA	<7%

Adverse health effects and symptoms:

Causes eye irritation. Causes eye pain, dizziness, CNS depression. Both ingredients can act as simple asphyxiants.

Section 4. FIRST AID MEASURES

Eye Exposure:

Causes irritation. Rinse victim's eyes with water or normal saline solution for 10 to 15 minutes. If symptoms persist, consult a physician.

Skin Exposure:

Wash all affected skin areas thoroughly with soap and water. If symptoms persist, contact a physician.

Inhalation:

Symptoms include asphyxia, restlessness, dizziness, drowsiness; may cause cardiac arrhythmia. Remove

Ingestion:

to fresh air. If symptoms persist, contact a physician. Give oxygen or artificial respiration as necessary. Overdose symptoms may include nausea and general weakness. Rinse mouth and throat. Do not induce vomiting. If symptoms persist, contact a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. **DO NOT INDUCE VOMITING.** Immediately transport the victim to a hospital

Medical conditions possibly aggravated by exposure:

None

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:

Not flammable

Flash Point:

Not determined

Suitable Extinguishing Media:

Use extinguishing media suitable for surrounding conditions.

Hazardous Combustion Products:

There may be a release of toxic by-products, including hydrogen halides that can cause damage.

Explosion Data:

Sensitivity to Mechanical Impact:

Not sensitive

Sensitivity to Static Discharge:

Not sensitive

Unusual fire/explosion hazards:

See above – Hazardous Combustion Products

Protective Equipment and

Precautions for Firefighters:

As in any fire, wear self-contained breathing apparatus (pressure-demand, NIOSH approved or equivalent), and full protective gear.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level.

Personal Protective Equipment:

Wear self-contained breathing apparatus when entering area unless atmosphere is proved safe. Wear full-face air purifying respirator with an organic vapor, multi-purpose cartridge if monitoring shows that the oxygen level is adequate (>19.5%).

Emergency Procedures:

Handle in accordance with good health and safety practices.

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 supplier location.

Methods for Clean Up: Dam up and soak up with inert absorbent material. Place in suitable containers for disposal. Return cylinder to authorized distributor. See Section 8.

Environmental Precautions: Prevent material from entering into waterways, soil or drains.

Waste Disposal: Observe all federal, state, and local regulations for products of this type when accomplishing disposal.

Other: None

Section 7. HANDLING AND STORAGE

Personal Precautions: Use appropriate PPE when handling or maintaining equipment. Handle only in well-ventilated areas. Wash thoroughly after handling (see Section 8).

Conditions for Safe Storage/Handling: Keep product in original container or extinguisher. Prevent falling. Do not allow near heat sources. Contents may be under pressure – inspect extinguisher consistent with product labeling to ensure container integrity.

Incompatible Products: None

Hazardous Decomposition Products: During fire, there may be a release of toxic by-products, including hydrogen halides that can cause damage.

Hazardous Polymerization: Will not occur.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	AIHA WEEL	DFG MAK *	EU BLV
2,2-Dichloro-1,1,1-trifluoroethane	NA	50 ppm	NA	NA

All values are 8 hour time weighted average concentrations. AIHA WEEL – American Industrial Hygiene Association, Workplace Environmental Exposure Level.

NOTE: Decomposition products during fire may include hydrogen fluoride (ACGIH TLV = 0.5ppm, 2ppm Ceiling)

Engineering Controls: Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment – PPE Code E:

The need for respiratory protection is not probable during short-term exposure. PPE use during production process must be independently evaluated.



Eye/Face Protection:

Skin and Body Protection:

Respiratory Protection:

Hygiene Measures:

Tightly fitting safety goggles

Wear protective gloves, and coveralls or long sleeve shirts.

Not normally necessary. If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn. Use air-purifying respirator (APR) with organic vapor canisters if exposure may exceed WEEL (50 ppm TWA). Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current safety and health requirements. The need for respiratory protection is not likely for short-term use in well ventilated areas. Good personal hygiene practice is 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:	Colorless liquid
Molecular Weight:	150.7
Odor:	Mild, sweet
Odor Threshold:	No information available
Decomposition Temperature °C:	No information available
Freezing Point °C:	No information available
Initial Boiling Point °C:	27
Physical State:	Liquid
pH:	Not Applicable

Flash Point °C:	None
Autoignition Temperature °C:	None
Boiling Point/Range °C:	27
Melting Point/Range °C:	-107
Flammability:	Not Flammable
Flammability Limits in Air °C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	None
Oxidizing Properties:	None
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Applicable
Vapor Density:	6.08 kg/m ³ at 25 °C
Vapor Pressure:	655 kPa at 20 °C
Specific gravity:	Approximately 1.47 at 25 °C
Solubility in water:	2100-4600 mg/L; 0.39% at 25 °C
Partition Coefficient:	2.17 at 20 °C
Viscosity:	No Information Available

Section 10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handling conditions. Vapors are heavier than air and can spread along floors displacing oxygen.
Reactivity:	No hazardous reactions under normal handling and storage.
Incompatibles:	Alkali or alkaline earth metals, powdered metals such as Al, Zn, Be, etc, and strong bases.
Conditions to Avoid:	Heat, flames, sparks.
Hazardous Decomposition Products:	Gaseous hydrogen fluoride (HF), gaseous hydrogen chloride (HCl), phosgene, fluorophosgene.
Possibility of Hazardous Reactions:	Hazardous decomposition products are formed under fire conditions.
Hazardous. Polymerization:	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Oxygen levels in the air can be reduced to 12-14%, causing loss of coordination, dizziness, increased heart rate, headache, confusion. Cardiac arrhythmia may occur.

Eyes: Irritation, may cause conjunctivitis.
 Skin: Irritation.
 Delayed: Symptoms appear to be relatively immediate.
 Acute Toxicity: Relatively non-toxic.
 Chronic Toxicity:
 Short-term Exposure: STOT (Single Exposure) – Narcotic effect, CNS.
 Long-term Exposure: STOT (Repeated Exposure) – Skin (defatting), liver.

Acute Toxicity Values - Health

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
2,2-Dichloro-1,1,1-trifluoroethane	32000 mg/kg (rat) 4h	>2000 mg/kg (rabbit) >2000 mg/kg (rat)	200 g/cm ³ (rat) 4h

Reproductive Toxicity: None observed.
 Target Organs and Effects (TOST): Single Exposure: Category 1 - CNS, liver. Category 2 – heart.
 Repeated Exposure: Category 1 - Liver

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
2,2-Dichloro-1,1,1-trifluoroethane	None	None	None	1 CNS, liver 2 Heart	1 Liver	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity: Moderate risk.
 Persistence/Degradability: Persistent
 Probability of rapid biodegradation: -0.0685 (Slow)
 Anaerobic biodegradation probability: 0.6409 (Rapid)
 Water solubility: 638.49 mg/L
 Bioaccumulation factor: 15.71
 Bioconcentration factor: 12.63 L/kg (Low)
 Mobility in soil (Log Koc-MCI Method) 2.134
 Log Octanol-Water Partition Coefficient, Log Kow (KOWWIN): 2.17
 Log Koc (Kow Method): 76.37 L/kg
 Log Koa (Koawin): 2.150
 Log Kaw (HenryWin estimate): 0.020
 Fraction sorbed to airborne particulates (Mackay model): 1.82E-009
 Level III Fugacity Model: 6.53% soil, 46% water, 0.0638% sediment, 0.411% air

Other Adverse Ecological Effects: Long lasting effects to the aquatic environment (Category 3)

Aquatic Toxicity Values - Research

Chemical Name	Acute (LC50)	Chronic (LC50)
2,2-Dichloro-1,1,1-trifluoroethane	55.5 mg/L 96h <i>Oncorhynchus mykiss</i> (Rainbow trout) EC50: 17.3 mg/L 48h <i>Daphnia magna</i> (Water flea)	No information found

Aquatic Toxicity Values – Calculated Estimates

Chemical Name	Acute (LC50)	Chronic (LC50)
2,2-Dichloro-1,1,1-trifluoroethane	N/A	N/A

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling

Use appropriate PPE when handling, and wash thoroughly after handling (see Section 8).

Waste Disposal Considerations

Dispose in accordance with federal, state, and local regulations.

Contaminated Packaging

Dispose in accordance with federal, state, and local regulations.

NOTES:

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. TRANSPORT INFORMATION

UN Number: 1956
UN Proper Shipping Name: Compressed Gas
Transport Hazard Class: 2.2
Packing Group: NA
Marine Pollutant?: NO

IATA Not regulated
DOT Not regulated

NOTES:

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. This transportation information covers the Halotron® I (CAS 306-83-2) fire extinguisher agent as shipped in bulk containers and not when contained in fire extinguishers or fire extinguisher systems.

Special Precautions for Shipping:

If 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 LIMITED QUANTITY when pressurized to less than 241 psig and when shipped via highway or rail. UN Class 2.2. Non-Flammable Gas, when shipping via air. 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

REACH Title VII Restrictions: No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on Label	Pollution Release and Transfer Registry (Class II)	Pollution Release and Transfer Registry (Class I)	Poison and Deleterious Substances Control Law
2,2-Dichloro-1,1,1-trifluoroethane	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
2,2-Dichloro-1,1,1-trifluoroethane	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

European Risk and Safety phrases:

EU Classification:	N	Dangerous to the environment
	Xn	Harmful
R Phrases:	39	Danger of very serious irreversible effects.
	48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
	59	Dangerous for the ozone layer.
	68/20	Harmful: possible risk of irreversible effects through inhalation.
S Phrases:	9	Keep container in a well-ventilated place.
	45	In case of accident or if you feel unwell, seek medical advise immediately (show label where possible).

U.S. Federal Regulatory Information:**SARA 313:**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) - This product is subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. This product is regulated under TSCA 8(a).

SARA 311/312 Hazard Categories:

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard-*	Yes
Reactive Hazard	No

* - Only applicable if material is in a pressurized extinguisher.

Clean Water/Clean Air Acts:

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). This product is regulated as a pollutant and is listed in the Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and Section 112 of the Clean Air Act Amendments of 1990 (Destroys ozone in the upper atmosphere).

U.S. 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: None
Illinois – Toxic Substance List: None
Kansas – Section 302/303 List: None
Massachusetts – Substance List: None
Minnesota – List of Hazardous Substances: Yes
Missouri – Employer Information/Toxic Substance List: None
New Jersey – Right to Know Hazardous Substance List: Yes
North Dakota – List of Hazardous Chemicals, Reportable Quantities: None
Pennsylvania – Hazardous Substance List: None
Rhode Island – Hazardous Substance List: None
Texas – Hazardous Substance List: None
West Virginia – Hazardous Substance List: None
Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65: No

Other:

Mexico – INSQ	Listed
Canada – WHMIS Hazard Class	Listed

Section 16. OTHER INFORMATION

This SDS 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. No modifications of this SDS are authorized by AMEREX Corporation. Questions or comments should be directed to AMEREX Corporation (See Section 1).

Issuing Date	13-February-2019
Revision Date	7-March-2019; Revision C
Revision Notes	None

The information herein is given in good faith but no warranty, expressed or implied, is made. Updated by William F. Garvin, CIH.