



SAFETY DATA SHEET

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Halon 1211
 Other Identifiers: Freon 12B1, BCF, Fluorocarbon 1211, Bromochlorodifluoromethane
 Product Code(s): 1211
 Model Codes for Extinguishers: 344, 352, 354, 355, 361, 369, 371, 372, 600, 695
 Recommended Use: Fire extinguisher material
 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
 Issued: March 7, 2019

Section 2. HAZARDS IDENTIFICATION

GHS – Classification

Health	Environmental	Physical
Acute Toxicity: None	None	Warning
Skin Corrosion/Irritation: Category 2	None	None
Skin Sensitization: None	None	None
Eye: Category 2A	None	None
STOT SE: Cat 1 (heart), Cat 2 (CNS, blood system), Cat 2 (narcotic effects, respiratory system)	None	Danger Warning
Carcinogen: None	None	None
Hazardous to Ozone Layer- Category 1	Danger	None



GHS – Label Symbol(s):

If Pressurized: Gas Under Pressure



GHS – Signal Word(s): **Warning**
Danger (STOT Single Exposure; Heart)

Other Hazards Not Resulting in Classification: Halon 1211 is a simple asphyxiate. May displace oxygen and cause rapid suffocation.

May cause frostbite in contact with skin or eyes.

GHS – Hazard Phrases

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H280 281	*- Contains gas under pressure; may explode if heated. Contains refrigerated gas; may cause cryogenic burns or injury.
Health	H313 332 335 336 370 371	May be harmful in contact with skin. Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. Causes damage to organs (heart). May cause damage to organs.
Environmental	None	
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P251 260 264 270 280	Do not pierce or burn, even after use. Do not breathe gas/mist/vapors/spray. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.
Response	P312 321 336 304+340 305+310 313+333	Call a POISON CENTER/doctor if you feel unwell. Specific treatment (see Section 4. First Aid Measures) Thaw frosted parts with lukewarm water. Do not rub affected areas. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Immediately call a doctor. May be harmful in contact with skin or if inhaled.
Storage	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 %
Bromochlorodifluoromethane	206-537-9	NA	353-59-3	100

Adverse health effects and symptoms:

Halon 1211 is a simple asphyxiate. The gas is heavier than air and may accumulate in low spaces causing a deficiency of oxygen and cause rapid suffocation. Symptoms include drowsiness and unconsciousness.

If people are intoxicated with fluorocarbons, strenuous exercise can result in arrhythmia.

May cause frostbite in contact with skin or eyes.

Section 4. FIRST AID MEASURES

Eye Exposure:	Liquid or cold gas can cause freezing injury to eyes. Flush eyes with cool water for 15 minutes. Seek medical attention immediately.
Skin Exposure:	May cause cold burns or frostbite. Remove contaminated clothing and flush affected areas with lukewarm (NOT HOT) water. Seek medical attention immediately if blistering of the dermal surface or if deep tissue freezing occurs
Inhalation:	Halon 1211 is a simple asphyxiate. May cause coughing, dizziness, headache, dyspnea, unconsciousness and death. If symptoms appear or respiratory distress occurs, remove victim to fresh air. Seek medical attention immediately.
Ingestion: Medical conditions possibly aggravated by exposure:	None under normal conditions Because of the possibility of cardiac arrhythmia, sympathomimetic drugs such as epinephrine should not be administered.

Section 5. FIRE-FIGHTING MEASURES

Flammable Properties:	Not flammable
Flash Point:	None
Suitable Extinguishing Media:	Non-combustible. Use extinguishing media suitable for surrounding conditions. Cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled only by specialists.
Hazardous Combustion Products:	Under certain conditions, fluorocarbon vapors may decompose on contact with flames or hot surfaces, creating the potential hazard of inhalation of toxic decomposition products such as hydrogen bromide, hydrogen fluoride, and hydrogen chloride.
<u>Explosion Data:</u>	
Sensitivity to Mechanical Impact:	Not sensitive
Sensitivity to Static Discharge:	Not sensitive
Unusual fire/explosion hazards:	Cylinders could rupture under heat of fire.
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.

Section 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Monitor oxygen level. If safe, move leaking cylinders to a safe place. Ventilate the area.
Personal Protective Equipment:	Wear self-contained breathing apparatus when entering a potentially oxygen deficient area unless atmosphere is proved safe.
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:	Return cylinder to authorized distributor.
Environmental Precautions:	Prevent spreading of vapors through sewers, ventilation systems and confined areas.
Other:	None

Section 7. HANDLING AND STORAGE

Personal Precautions:	Only experienced and properly instructed persons should handle gases under pressure.
Conditions for Safe Storage/Handling:	If under pressure - Protect from sunlight and store in a well-ventilated place. Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, Pamphlet CGA-P1, Safe Handling of Compressed Gases in Containers.
Incompatible Products:	Alkali and alkaline earth metals – certain reactive metals such as powdered zinc and aluminum.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA PEL	ACGIH TLV	NIOSH IDLH	EU BLV
Bromochlorodifluoromethane	NR	NR	NR	NR

NR = Not Regulated.

Engineering Controls:

Local exhaust ventilation to prevent accumulation of high concentrations and maintain air-oxygen levels at or above 19.5%. Oxygen detectors should be used when asphyxiating gases may be released. Systems under pressure should be regularly checked for leakages.

Personal Protective Equipment

Safety glasses



Eye/Face Protection:
Skin and Body Protection:
Respiratory Protection:

Tightly fitting safety goggles or face shield
Wear protective gloves, safety shoes.
If oxygen levels fall below 19.5%, use positive pressure respirator with escape cylinder or self-contained breathing apparatus for oxygen-deficient atmospheres. Positive-pressure supplied air respirators may be required for high airborne concentrations. Respiratory protection must be provided in accordance with current local regulations. Good personal hygiene practice is essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Do not get in eyes, on skin, or on clothing.

Hygiene Measures:

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless liquified gas under pressure
Molecular Weight:	165.362 g/mole
Odor:	Sweet
Odor Threshold:	No information available
Decomposition Temperature °C:	No information available
Freezing Point °C:	No information available
Initial Boiling Point °C:	-3.7
Physical State:	Compressed liquefied gas
pH:	Not applicable
Flash Point °C:	None
Auto-ignition Temperature °C:	No information available

Boiling Point/Range °C:	-3.7
Melting Point/Range °C:	-159.5
Flammability:	Not Flammable
Flammability Limits in Air °C:	Upper – Not Flammable; Lower-Not Flammable
Explosive Properties:	None
Oxidizing Properties:	Not Applicable
Volatile Component (%vol)	Not Applicable
Evaporation Rate:	Not Applicable
Vapor Density:	5.7 (air=1)
Vapor Pressure:	2.07x10 ³ Hg (at 25°C)
Density at 25 C:	1.850
Solubility:	None

Section 10. STABILITY AND REACTIVITY

Reactivity:	Not Applicable
Chemical Stability:	Stable under recommended storage and handling conditions.
Incompatibles:	Alkali and alkaline earth metals – certain reactive metals such as powdered zinc and aluminum.
Conditions to Avoid:	Extremely high temperatures.
Hazardous Decomposition Products:	Under certain conditions, fluorocarbon vapors may decompose on contact with flames or hot surfaces, creating the potential hazard of inhalation of toxic decomposition products such as hydrogen bromide, hydrogen fluoride, and hydrogen chloride.
Possibility of Hazardous Reactions:	None
Hazardous Polymerization	Does not occur

Section 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Inhalation, skin, and eye contact.
Symptoms:	
Immediate:	
Inhalation:	Increased respiration, headache, mild narcotic effects, drowsiness, unconsciousness, death.
Eyes:	Contact with liquid/gas may cause burns/frostbite.
Skin:	Contact with liquid/gas may cause burns/frostbite.
Delayed:	Possible arrhythmia after several minutes.
Acute Toxicity:	Simple asphyxiant.
Chronic Toxicity:	
Short-term Exposure:	May displace oxygen and cause rapid suffocation.

Long-term Exposure:

Possible arrhythmia until concentrations of fluorocarbon can be removed from the body.

Acute Toxicity Values - Health

Chemical Name	LD50		LC50 (Inhalation)
	Oral	Dermal	
Bromochlorodifluoromethane	No information available	No information available	85000-100000 ppm (rat) 4h

Reproductive Toxicity:

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

Target Organs and Effects (TOST- Single Exposure): Category 1 (heart), Category 2 (CNS, blood system; Category 3 (narcotic effects, respiratory tract irritation).

Other Toxicity Categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exp	Aspiration
Bromochlorodifluoromethane	None	None	None	Central Nervous System, Respiratory System Heart, Blood System	None	None

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity:

Persistence/Degradability:

Slowly degrades in atmosphere

Probability of rapid biodegradation (BIOWIN): 0.3273 (Slow)

Anaerobic biodegradation probability (BIOWIN):0.8463 (Fast)

Bioconcentration factor:

8.393 L/kg (Low)

Bioaccumulation factor:

8.439

Mobility in soil:

Very high

Log Kow:

1.9

Log Koc (Kow Method):

44.53 L/kg

Log Koa:

1.315

Log Kaw:

0.585

*Level III Fugacity Model:

1.11% soil, 47% water, 0.188% sediment, 51.7% air

Other Adverse Ecological Effects:

Harmful to the ozone layer

Aquatic Toxicity Values – Environment – Research

Chemical Name	Acute (LC50)	Chronic (EC50)
Bromochlorodifluoromethane	Not available	Not available

Aquatic Toxicity Values – Environment – Estimates

Chemical Name	Acute (LC50)	EC50
Bromochlorodifluoromethane	85.2 mg/L (fathead minnow) 152.21 mg/L (fish)	44.6 mg/L (daphnia)

Section 13. DISPOSAL CONSIDERATIONS

Safe Handling	None.
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:	1974
UN Proper Shipping Name:	Compressed gas, N.O.S, (Bromochlorodifluoromethane)
DOT Transport Hazard Class:	2.2
Packing Group:	NA
Marine Pollutant?:	NO
IATA	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.

Special Precautions for Shipping:

If shipped in a stored pressure-type fire extinguisher, carbon dioxide in a pressurized container is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be HALON 1211 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	WHMIS	Yes
Australia	AICS	Yes
Europe	EINECS/ELINCS	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
Bromochloro-difluoromethane	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
Bromochloro-difluoromethane	Not Applicable	Not Applicable	Not Applicable	Yes	Not Applicable

European Risk and Safety phrases:

EU Classification:	Xi - Irritant	
R Phrases:	36/37/38	Irritating to eyes, respiratory system and skin
S Phrases:	23	Do not breathe gas/fumes/vapour/spray
	36/37/39	Wear suitable protective clothing, gloves and eye/face protection.

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.

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 substance regulated as a pollutant pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42). This product is regulated by the Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs), Class 1 – Group II (see 40 CFR 61) and Section 112 of the Clean Air Act Amendments of 1990.

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: None
- Missouri** – Employer Information/Toxic Substance List: None
- New Jersey** – Right to Know Hazardous Substance List: None
- New York** - Listed
- 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 component is listed on the California Proposition 65 list.

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	4-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.