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

<table>
<thead>
<tr>
<th>GHS – Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
</tr>
<tr>
<td>Acute Toxicity: None</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation: Category 2</td>
</tr>
<tr>
<td>Skin Sensitization: None</td>
</tr>
<tr>
<td>Eye: Category 2A</td>
</tr>
<tr>
<td>STOT SE: Cat 1 (heart), Cat 2 (CNS, blood system), Cat 2 (narcotic effects, respiratory system)</td>
</tr>
<tr>
<td>Carcinogen: None</td>
</tr>
<tr>
<td>Hazardous to Ozone Layer- Category 1</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>GHS Hazard</th>
<th>GHS Codes(s)</th>
<th>Code Phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>H280</td>
<td>*- Contains gas under pressure; may explode if heated.</td>
</tr>
<tr>
<td></td>
<td>281</td>
<td>Contains refrigerated gas; may cause cryogenic burns or injury.</td>
</tr>
<tr>
<td>Health</td>
<td>H313</td>
<td>May be harmful in contact with skin.</td>
</tr>
<tr>
<td></td>
<td>332</td>
<td>Harmful if inhaled.</td>
</tr>
<tr>
<td></td>
<td>335</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td></td>
<td>336</td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td></td>
<td>370</td>
<td>Causes damage to organs (heart).</td>
</tr>
<tr>
<td></td>
<td>371</td>
<td>May cause damage to organs.</td>
</tr>
<tr>
<td>Environmental</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Precautionary:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>P101</td>
<td>If medical advice is needed, have product container or label at hand.</td>
</tr>
<tr>
<td>Prevention</td>
<td>P251</td>
<td>Do not pierce or burn, even after use.</td>
</tr>
<tr>
<td></td>
<td>260</td>
<td>Do not breathe gas/mist/vapors/spray.</td>
</tr>
<tr>
<td></td>
<td>264</td>
<td>Wash skin thoroughly after handling.</td>
</tr>
<tr>
<td></td>
<td>270</td>
<td>Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td></td>
<td>280</td>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td>Response</td>
<td>P312</td>
<td>Call a POISON CENTER/doctor if you feel unwell.</td>
</tr>
<tr>
<td></td>
<td>321</td>
<td>Specific treatment (see Section 4. First Aid Measures)</td>
</tr>
<tr>
<td></td>
<td>336</td>
<td>Thaw frosted parts with lukewarm water. Do not rub affected areas.</td>
</tr>
<tr>
<td></td>
<td>304+340</td>
<td>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</td>
</tr>
<tr>
<td></td>
<td>305+310</td>
<td>IF IN EYES: Immediately call a doctor.</td>
</tr>
<tr>
<td></td>
<td>313+333</td>
<td>May be harmful in contact with skin or if inhaled.</td>
</tr>
<tr>
<td>Storage</td>
<td>410+403</td>
<td>*- Protect from sunlight. Store in well-ventilated place.</td>
</tr>
<tr>
<td>Disposal</td>
<td>P501</td>
<td>Dispose of contents through a licensed disposal company. Contaminated container should be disposed of as unused product.</td>
</tr>
</tbody>
</table>

*- If under pressure

### Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EC No.</th>
<th>REACH Reg. No.</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>206-537-9</td>
<td>NA</td>
<td>353-59-3</td>
<td>100</td>
</tr>
</tbody>
</table>

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: None under normal conditions

Medical conditions possibly aggravated by exposure: 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.

Explosion Data:
  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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>NIOSH IDLH</th>
<th>EU BLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
</tr>
</tbody>
</table>

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:**
Tightly fitting safety goggles or face shield

**Skin and Body Protection:**
Wear protective gloves, safety shoes.

**Respiratory Protection:**
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:**

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.

### 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: 2.07x10³ 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 (Inhalation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>No info</td>
<td>No info</td>
<td>85000-100000 ppm (rat) 4h</td>
</tr>
</tbody>
</table>

- **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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Germ Cell Mutagenicity</th>
<th>Carcinogenicity</th>
<th>Reproductive</th>
<th>TOST Single Exp</th>
<th>TOST Repeated Exp</th>
<th>Aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Central Nervous System, Respiratory System</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

### Section 12. ECOLOGICAL INFORMATION

- **Ecotoxicity:** Slowly degrades in atmosphere
- **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 Koaa:** 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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Acute (LC50)</th>
<th>Chronic (EC50)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>
**Aquatic Toxicity Values – Environment – Estimates**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Acute (LC50)</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>85.2 mg/L (fathead minnow)</td>
<td>44.6 mg/L</td>
</tr>
<tr>
<td></td>
<td>152.21 mg/L (fish)</td>
<td>(daphnia)</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Country(ies)</th>
<th>Agency</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States of America</td>
<td>TSCA</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>WHMIS</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia</td>
<td>AICS</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>EINECS/ELINCS</td>
<td>Yes</td>
</tr>
</tbody>
</table>

REACH Title VII Restrictions:

No information available

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Dangerous Substances</th>
<th>Organic Solvents</th>
<th>Harmful Substances Whose Names Are to be Indicated on Label</th>
<th>Pollution Release and Transfer Registry (Class II)</th>
<th>Pollution Release and Transfer Registry (Class I)</th>
<th>Poison and Deleterious Substances Control Law</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying</th>
<th>ISHA – Harmful Substances Requiring Permission</th>
<th>Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals</th>
<th>Toxic Release Inventory (TRI) – Group I</th>
<th>Toxic Release Inventory (TRI) – Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochlorodifluoromethane</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Yes</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

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 be 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.