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## BCF (Halon 1211) - September 1999

### Section 1 - Name & Hazard Summary

**Material name:** BCF (Halon 1211)

**Manufacturer:** ICI Americas Inc., Wilmington, Delaware 19897 Phone (302) 575-3000 (24 Hours)

**Hazard summary** (as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200):

**Physical hazards:** Compressed gas

**Health hazards:** Harmful (central nervous system depression, cardiac arrhythmias)

Read the entire MSDS for a more thorough evaluation of the hazards.

### Section 2 - Ingredients

Bromochlorodifluoromethane (CAS 353-59-3) 100% TLV (ACGIH) Not listed

Ingredients not precisely identified are proprietary or non hazardous. All ingredients appear on the EPA TSCA Inventory. Values are not product specifications. gt = greater than, lt = less than, ca = approximately

### Section 3 - Physical Data

**Boiling point:** 26°F

**Vapor pressure:** 15 psig at 15.6°C

**Vapor density (air = 1):** 5.7

**Solubility in water:** Insoluble

**pH:** No data

**Specific gravity:** 1.83 (liquid)

**% Volatile by volume:** 100

**Appearance and odor:** Colorless gas or colorless volatile liquid with very faint sweet odor

### Section 4 - Fire and Explosion Hazard Data

**Flash point (and method):** DOES NOT FLASH

**Auto ignition temperature:** NONE

**Flammable limits (STP):** None

**Extinguishing media:** Not applicable; product is an extinguishing agent. Use water to cool fire-exposed cylinders or other containers.

**Special fire fighting protective equipment:** Self-contained breathing apparatus with full face piece and protective clothing when re-entering unventilated fire areas where product has been used.

**Unusual fire and explosion hazards:** When BCF is discharged onto a fire, it decomposes above 900°F, releasing bromide ions, the extinguishing agent. However, halogen compounds, such as halogen acids, are also formed. These byproducts, although harmful if inhaled, are easily detected; only a few parts per million create an unpleasant, acrid odor, which serves as a warning to the user. After the extinguisher is discharged, the area should be vacated until ventilation clears the atmosphere.

### Section 5 - Reactivity Data

**Stability:** Stable under normal conditions. Decomposes under fire conditions (above 900°F).

**Incompatibility (materials to avoid):** Active metals such as powdered aluminum and magnesium, and fires of metal hydrides.

**Hazardous decomposition products:** Thermal decomposition: BCF begins decomposing at temperatures above 9000F to give free halogens, halogen acids, and small amounts of carbonyl halides. Tests simulating fire conditions could not detect phosgene in amounts as low as 0.04 ppm.

**Hazardous polymerization:** Will not occur.

### Section 6 - Health Hazard Assessment

**General:** The health hazard assessment is based on a combination of available toxicity information and human experience.

**Ingestion:** Ingestion is not likely to occur since this material is a gas at room temperature.

**Eye contact:** The liquid form of this material can produce chilling sensations and discomfort.

**Skin contact:** Evaporation of liquid from the skin can produce chilling sensations. Skin injury does not result.

**Skin absorption:** Systematically toxic concentrations are unlikely to be absorbed through the skin in man.

**Inhalation:** Exposures to concentrations of this material above 4% for longer than one minute can cause toxic side effects.

**Other effects of overexposure:** Prolonged exposures can cause dizziness, headache, nausea, impaired coordination progressing to unconsciousness. In susceptible individuals, cardiac sensitization to circulating epinephrine compounds can result in potentially fatal heart arrhythmias.

#### First aid procedures:

**Skin:** Wash material off the skin with copious amounts of soap and water. If redness, itching or a burning sensation develops, get medical attention.

**Eyes:** Immediately flush with copious amounts of water for at least 15 minutes. If redness, itching or a burning sensation develops, have eyes examined and treated by medical personnel.

**Ingestion:** Give 1 or 2 glasses of warm water to drink and get medical attention. DO NOT induce vomiting. Have victim lie down and keep warm. (Never give anything by mouth to an unconscious person.)

**Inhalation:** Remove victim to fresh air. If cough or other respiratory symptoms develop, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.

**Note to Physician:** Product can induce cardiac muscle sensitization to circulating epinephrine-like compounds. DO NOT give adrenaline or similar sympathomimetic drugs. DO NOT allow a victim to exercise until 24 hours following specific exposures. Freeze burns of mucus tissue can develop following contact with liquid form of this material.

### Section 7 - Spill or Leak Procedures

**Steps to be taken in case material is released or spilled:** Ventilate spill area and recover any liquid. Protect against frostbite from evaporating liquid.

**Disposal method:** Not applicable

Container disposal: Not applicable

### Section 8 - Special Protection Information

**TLV or suggested control value:** No TLV assigned by ACGIH. ICIA operates its facilities such that employee exposure to this material is kept below 1000 ppm as an 8-hour TWA.

**Ventilation:** Ventilate low-lying areas, such as, sumps or pits where dense vapors may collect. Use local exhaust to control exposures.

**Respiratory protection (specify type):** Not normally needed if controls are adequate. If needed, use MSHA/NIOSH approved respirator for organic vapors. For high concentrations and oxygen-deficient atmospheres. Use positive pressure air-supplied respirator.

**Protective clothing:** Impervious gloves and apron to protect against liquid exposure.

**Eye protection:** Chemical tight goggles; full face shield in addition if splashing is possible.

**Other protective equipment:** Eyewash station and safety shower in work area when working with liquefied product.

### Section 9 - Special Precautions or Other Comments

**Precautions to be taken in handling or storing:** Store in a cool area with good ventilation. Keep vapors away from high temperature surfaces to avoid toxic and corrosive decomposition products. Enforce "NO SMOKING" rules in areas of use.