



NATIONAL REFRIGERANTS, INC.

R-13B1

Safety Data Sheet

R-13B1

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: R-13B1
OTHER NAME: Bromotrifluoromethane
USE: Refrigerant
DISTRIBUTOR: National Refrigerants, Inc.
661 Kenyon Avenue
Bridgeton, New Jersey 08302

FOR MORE INFORMATION CALL:
(Monday-Friday, 8:00am-5:00pm)
1-800-262-0012

IN CASE OF EMERGENCY CALL:
CHEMTREC: 1-800-424-9300

2. HAZARDS IDENTIFICATION

| | |
|---------------------------------|--|
| CLASSIFICATION: | Gases under pressure, Liquefied Gas |
| SIGNAL WORD: | WARNING |
| HAZARD STATEMENT: | Contains gas under pressure, may explode if heated |
| SYMBOL: | Gas Cylinder |
| PRECAUTIONARY STATEMENT: | STORAGE: Protect from sunlight, store in a well ventilated place |



EMERGENCY OVERVIEW: Colorless, volatile liquid with ethereal and faint sweetish odor. Non-flammable material. Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result from exposure. Vapors displace air and can cause asphyxiation in confined spaces. At higher temperatures, (>250°C), decomposition products may include Hydrochloric Acid (HCl), Hydrofluoric Acid (HF) and carbonyl halides.

POTENTIAL HEALTH HAZARDS

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse of deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

HUMAN HEALTH EFFECTS

Skin and eye contact with liquid or escaping vapor may include frostbite. Significant skin permeation and systemic toxicity after contact appears unlikely. There are no reports of human sensitization.

Inhalation may include nonspecific discomfort such as nausea, headache, or weakness. Inhalations of high concentrations may include temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Individuals with preexisting diseases of the central nervous system or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.



3. COMPOSITION / INFORMATION ON INGREDIENTS

| <u>INGREDIENT NAME</u> | <u>CAS NUMBER</u> | <u>WEIGHT %</u> |
|------------------------|-------------------|-----------------|
| Bromotrifluoromethane | 75-63-8 | 100 |

COMMON NAME and SYNONYMS

R-13B1; CFC13B1

There are no impurities or stabilizers that contribute to the classification of the material identified in Section 2

4. FIRST AID MEASURES

INHALATION: If inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN: Flush area with plenty of water. Remove contaminated clothing. Wash clothing before reuse. Call a physician.

EYES: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION: Ingestion is not considered a potential route of exposure.

ADVICE TO PHYSICIAN: Product is an asphyxiant and may induce cardiac muscle sensitization to epinephrine-like compounds. Do not give adrenaline or similar sympathomimetic drugs.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

| | |
|---|-----------------|
| FLASH POINT: | Nonflammable |
| FLASH POINT METHOD: | Not applicable |
| AUTOIGNITION TEMPERATURE: | Not established |
| UPPER FLAME LIMIT (volume % in air): | Not applicable |
| LOWER FLAME LIMIT (volume % in air): | Not applicable |
| FLAME PROPAGATION RATE (solids): | Not applicable |
| OSHA FLAMMABILITY CLASS: | Not applicable |

EXTINGUISHING MEDIA:

As appropriate for combustibles in area.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Move container from the fire area, if possible. Cool fire exposed containers with water well after the fire is out to prevent possible explosions.

SPECIAL FIRE FIGHTING PRECAUTIONS/ INSTRUCTIONS:

In the event of fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus with full face piece, operated in the positive pressure mode.



6. ACCIDENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: Ventilate the area and remove all ignition source. Contain the spill by building a dike using absorbent material. Collect the remainder of the spill with absorbent material and place into a drum approved for waste disposal. Flush area with water.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

7. HANDLING AND STORAGE

NORMAL HANDLING: (Always wear recommended personal protective equipment.)
Minimize vaporization by sealing in a tightly closed container. Avoid eye and skin contact. Avoid breathing this substance. When transferring from containers, ground and bond both containers. Do not drop, reuse or refill container. Do not cut, grind or weld on or near container due to possible toxic fume generation.

STORAGE RECOMMENDATIONS:
Store in a cool, well ventilated area. Keep away from heat, sparks and flames.

INCOMPATIBILITIES:
Avoid contact with alkaline earth metals, alkalis, powdered aluminum, zinc and beryllium since they may react with or accelerate decomposition of this material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places.

PERSONAL PROTECTIVE EQUIPMENT
Impervious gloves and chemical splash goggles should be worn when handling liquid. Wear impervious gloves during normal working conditions. Under normal conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a spill occurs.

EXPOSURE GUIDELINES

| <u>INGREDIENT NAME</u> | <u>ACGIH TLV</u> | <u>OSHA PEL</u> |
|------------------------|------------------|-----------------|
| Bromotrifluoromethane | 1,000 ppm TWA | 1,000 ppm TWA |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|-------------------|
| APPEARANCE: | Clear |
| PHYSICAL STATE: | Liquefied gas |
| MOLECULAR WEIGHT: | 148.9 |
| CHEMICAL FORMULA: | CBrF ₃ |
| ODOR: | Slight ethereal |
| SPECIFIC GRAVITY (water = 1.0) | 1.54 @ 25°C |
| SOLUBILITY IN WATER (weight %): | NEGLIGIBLE |
| pH: | Not applicalbe |
| BOILING POINT: | -58°C (-72.4°F) |



| | |
|--|------------------------------------|
| FREEZING POINT: | -168°C (-270.4 F) |
| VAPOR PRESSURE: | 220 psia @ 20°C |
| VAPOR DENSITY (air = 1.0): | 5.14 |
| EVAPORATION RATE: | >1 Compared to CCl ₄ =1 |
| % VOLATILES: | 100 |
| ODOR THRESHHOLD: | Not Established |
| FLAMMABILITY: | NA |
| LEL/UEL: | None/None |
| RELATIVE DENSITY: | 1.54g /cm ³ @ 25°C |
| PARTITION COEFF (n-octanol/water) | Log Pow: 1.86 |
| AUTO IGNITION TEMP: | Not Determined |
| DECOMPOSITION TEMPERATURE: | >250°C |
| VISCOSITY: | NA |
| MELTING POINT: | NA |
| FLASH POINT: | Not Applicable |

10. STABILITY AND REACTIVITY

NORMALLY STABLE: This product is stable.

INCOMPATIBILITIES:

Incompatible with alkali or alkaline earth metals – powdered Al, Zn, Be, etc.

HAZARDOUS DECOMPOSITION PRODUCTS:

Irritating and/ or toxic gases due to decomposition of the product may be generated during a fire. These include hydrobromic, hydrochloric and hydrofluoric acids. Possibly free halides and carbonyl halides.

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

ANIMAL DATA:

Inhalation 4 hr. ALC: >800,000 ppm in rats

The compound is untested for skin or eye irritancy, and is untested for animal sensitization.

Effects observed in animals from single inhalation exposures to concentrations ranging from 20-80% include pulmonary changes, irregular respiration, and hyperactivity, followed by decreased activity, tissue congestion or closed eyes. Exposures at 3% caused increased urine volume and creatinine, reversible pathological changes in the kidneys, and increased urinary fluoride concentration. One study showed no arrhythmogenic effects in dogs at a concentration of 20% R-116, while another study did show some arrhythmogenic effects in both guinea pigs and dogs. Repeated exposures to rats and guinea pigs to concentrations > 12% showed altered blood counts, lung inflammation, and histologic changes in the liver. Long term exposures to > 20% resulted in an initial decrease in growth rate, but no other adverse changes were noted.

No animal test reports are available to define carcinogenic, developmental, or reproductive hazards. The compound does not produce genetic damage in bacterial cell cultures but has not been tested in animals.



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CARCINOGENICITY INFORMATION

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

12. ECOLOGICAL INFORMATION

None Determined. Due to the high volatility, not expected to cause soil or water pollution.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Comply with Federal, State and local regulations. Reclaim by distillation or remove to a permitted waste disposal facility.

14. TRANSPORT INFORMATION

| | |
|-------------------------------------|---|
| US DOT ID NUMBER: | UN1009 |
| US DOT PROPER SHIPPING NAME: | Bromotrifluoromethane or Refrigerant gas R-13B1 |
| US DOT HAZARD CLASS: | 2.2 |
| DOT PACKING GROUP: | N/A |

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA INVENTORY STATUS: Reported/ Included

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

| | |
|-------------|-----|
| Acute : | Yes |
| Chronic : | No |
| Fire : | No |
| Reactivity: | No |
| Pressure : | Yes |



SARA Extremely Hazardous Substance - No
CERLCA Hazardous Substance - No
SARA Toxic Chemical - No

CALIFORNIA PROPOSITION 65:

The ingredients in this product do not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

CURRENT ISSUE DATE: May, 2018
PREVIOUS ISSUE DATE: May, 2015

NFPA, NPCA-HMIS:

NPCA-HMIS Classification: Health – 1, Flammability – 0, Reactivity – 1

Personal Protection rating to be supplied by user depending on use conditions.

DISCLAIMER:

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