NATIONAL REFRIGERANTS, INC.

R-508B

Safety Data Sheet

R-508B

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: R-508B
OTHER NAME: Trifluoromethane, Hexafluoroethane
USE: Refrigerant Gas
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**

POTENTIAL HEALTH HAZARDS

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness, or death. Intentional misuse can be fatal. Vapor reduces oxygen available for breathing and is heavier than air. Liquid contact can cause frostbite.

HUMAN HEALTH EFFECTS:

Human health effects of overexposure by inhalation may include nonspecific discomfort such as nausea, headache, or weakness; temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or with gross overexposure, possibly temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation. Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposure. Eye or skin contact with the liquid may cause frostbite.

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.

3. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Trifluoromethane	75-46-7	30-50
Hexafluoroethane	76-16-4	50-70

COMMON NAME and SYNONYMS
R-508B; HFC508B

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

4. FIRST AID MEASURES

SKIN: Flush with water. Treat for frostbite if necessary.

EYES: Flush with water. Call a physician if frostbite occurs.

INHALATION: IF HIGH CONCENTRATIONS ARE INHALED: Immediately remove to fresh air. Keep persons calm. Call a physician. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

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

NOTES TO PHYSICIAN: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be considered only as a last resort in life-threatening emergencies.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: Will not burn

FLAMMABLE LIMITS IN AIR, % BY VOLUME
LEL: Not Applicable
UEL: Not Applicable

FIRE AND EXPLOSION HAZARDS:
Use water spray or fog to cool containers. Cylinders are equipped with temperature and pressure relief devices but may still rupture under fire conditions. Decomposition may occur, producing HF, CO and possibly COF2.

EXTINGUISHING MEDIA:
Use media appropriate for surrounding material.

FIRE FIGHTING INSTRUCTIONS:
Self-contained breathing apparatus (SCBA) is required if cylinders rupture or release under fire conditions. Water runoff should be contained and neutralized prior to release.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (Personnel)
NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up.

ACCIDENTAL RELEASE MEASURES
Material evaporates at atmospheric pressure (vaporizes). Ventilate area – especially low places where heavy vapors might collect. Remove open flames.

7. HANDLING AND STORAGE

HANDLING (Personnel):

Avoid contact with liquid with eyes and prolonged skin exposure. Use with sufficient ventilation to keep employee exposure below recommended limits.

STORAGE:

Clean, dry area. Do not heat above 51.7°C (125 °F)

INCOMPATIBILITIES:

Freshly abraded aluminum surfaces at specific temperatures and pressures may cause a strong exothermic reaction. Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

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 places.

PERSONAL PROTECTIVE EQUIPMENT

Neoprene rubber or leather gloves should be used when handling liquid. Chemical splash goggles should be worn when handling liquid. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large spill or release occurs.

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT
Trifluoromethane	None	None	*1000 ppm TWA (8 & 12hr)
Hexafluoroethane	None	None	*1000 ppm TWA (8 & 12hr)

* = Workplace Environmental Exposure Level (AIHA)

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DATA

COLOR:	Clear, colorless
FORM:	Liquefied Gas
ODOR:	Slight ethereal
BOILING POINT:	-88°C (-126°F)
VAPOR DENSITY:	(Air = 1.0)
% VOLATILES:	100 WT %
ODOR THRESHHOLD:	Not established
FLAMMABILITY:	Not applicable
LEL/UEL:	None/None
RELATIVE DENSITY:	1.15 g/cm^3 at 25˚ C
PARTITION COEFF (n-octanol/water)	Not applicable
AUTO IGNITION TEMP:	Not Determined
DECOMPOSITION TEMPERATURE:	>250 ˚C
VISCOSITY:	Not applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:

Material is stable. However, avoid open flames and high temperatures.

DECOMPOSITION:

This product can be decomposed by high temperatures (open flames, glowing metal surfaces, etc.) forming HF, COF2 or CO. These materials are toxic and irritating. Contact should be avoided.

POLYMERIZATION:

Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

ANIMAL DATA

TRIFLUOROMETHANE: LC_{50} : Inhalation 4 hr. (rat) - > 663,000 ppm

Material is untested for skin and eye irritancy, and for animal sensitization.
Effects from single high inhalation exposure to Trifluoroemethane include anaesthetic effects, and nonspecific effects such as weight loss were observed at concentrations >22%. No cardiac sensitization was observed in dogs after breathing 800,000 ppm for periods of 5-10 minutes following epinephrine challenge. In another test, dogs exposed to up to 30% or up to 50% (with additional oxygen), had no positive responses. No cardiac sensitization occurred in baboons exposed by inhalation to 10%, 30%, 50%, 70% Trifluoromethane before or after an epinephrine challenge; there was a dose-related decrease in heart rates and differences in respiratory rates during exposure.

No animal tests are available to define the carcinogenic hazards of Trifluoromethane. The maternal and developmental NOAEL was 50,000 ppm. Trifluoromethane is not considered a unique developmental hazard to the conceptus. There were no developmental or reproductive effects.

Tests have shown that Trifluoromethane does not produce genetic damage in bacterial or mammalian cell cultures. It has not produced genetic damage in tests on animals.

HEXAFLUOROETHANE: Inhalation 4-hr. LC50 : > 800,000 ppm in rats

Effects observed in animals by inhalation include decreased growth rate, pulmonary changes, irregular respiration, 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%, while another study did show some arrhythmogenic effects in both guinea pigs and dogs. Long-term inhalation exposures 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.

POTENTIAL HEALTH HAZARDS

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nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposure. Eye or skin contact with the liquid may cause frostbite.

CARCINOGENICITY INFORMATION:

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FURTHER INFORMATION:

Acute effects of rapid evaporation of the liquid may cause frostbite. Vapors are heavier than air and can displace oxygen causing difficulty breathing or suffocation. May cause cardiac arrhythmia.

12. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Reclaim by distillation or remove to a permitted waste disposal facility. Dispose in accordance with all Federal, State and local regulations.

13. TRANSPORT INFORMATION

SHIPPING INFORMATION

DOT UN NUMBER: UN1078
PROPER SHIPPING NAME: Refrigerant Gas, n.o.s. (Hexafluoroethane, Trifluoromethane)
HAZARD CLASS: 2.2
DOT Label: Nonflammable Gas

14. 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**

LISTS:

SARA Extremely Hazardous Substance - No
CERCLA Hazardous Substance - No
SARA Toxic Chemicals - No

15. OTHER INFORMATION

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

OTHER INFORMATION: HMIS Classification: Health – 1, Flammability – 0, Reactivity – 1

DISCLAIMER:

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