



## MATERIAL SAFETY DATA SHEET

### PRODUCT IDENTIFICATION

PRODUCT NAME: REFRIGERANT 13B1 (HALON-13B1)  
CHEMICAL NAME: BROMOTRIFLUOROMETHANE  
GENERAL USE: REFRIGERANT

<b>PRODUCT INFORMATION</b> (800) 262-0012	<b>MEDICAL EMERGENCY</b> (856) 455-4555
<b>TRANSPORTATION EMERGENCY</b> CHEMTREC (800) 424-9300	<b>DISTRIBUTOR / MANUFACTURER</b> NATIONAL REFRIGERANTS, INC. 661 KENYON AVE. ROSENHAYN, NJ

### INGREDIENTS-----HAZARD CLASSIFICATIONS

<u>COMPONENTS-HAZARDOUS:</u>	<u>CAS #</u>	<u>%</u>
<b>BROMOTRIFLUOROMETHANE (13B1)</b>	75-63-8	100.0

\*LISTED SARA SECTION 313

HMIS=1-0-0-H

### HEALTH HAZARD INFORMATION

PERMISSIBLE EXPOSURE LIMITS:

ACGIH (TLV) :TWA =1,000PPM

OSHA FINAL LIMITS:

TWA=1,000PPM

### EMERGENCY FIRST AID

INGESTION:

N/A - PRODUCT IS A GAS AT AMBIENT CONDITIONS.  
NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

DERMAL:

FLUSH THE AREA WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING. WASH CLOTHING BEFORE REUSE. GET MEDICAL ATTENTION.

EYE CONTACT:

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.



INHALATION:

IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

NOTE TO PHYSICIANS:

PRODUCT IS AN ASPHYXIANT AND MAY INDUCE CARDIAC MUSCLE SENSITIZATION TO EPINEPHRINE-LIKE COMPOUNDS. DO NOT GIVE ADRENALINE OR SIMILAR SYMPATHOMIMETIC DRUGS.

**FIRE AND EXPLOSION DATA**

FLASH POINT:

NONFLAMMABLE

FLAMMABLE LIMITS:

LOWER: NA      UPPER: NA

AUTOIGNITION TEMP.:

NE

EXTINGUISHING MEDIA:

USE EXTINGUISHING MEDIA APPROPRIATE TO SURROUNDING FIRE CONDITIONS.

SPECIAL FIRE FIGHTING PROCEDURES:

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.

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.

**SPILL MANAGEMENT**

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.

**SPECIAL HANDLING AND STORAGE CONDITIONS**

MINIMIZE VAPORIZATION BY SEALING IN A TIGHTLY CLOSED CONTAINER. STORE IN A COOL, WELL-VENTILATED AREA. KEEP AWAY FROM HEAT, SPARKS AND FLAMES. 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.

**SPECIAL PROTECTION INFORMATION**

VENTILATION REQUIREMENTS:

LOCAL EXHAUST, USE WITH ADEQUATE VENTILATION. WHERE VENTILATION IS INADEQUATE, USE A LOCAL EXHAUST SYSTEM TO REMOVE VAPORS.



EYE (GOGGLES) :

SPLASH-PROOF GOGGLES WITH SIDE SHIELDS ARE REQUIRED FOR ANY TYPE OF HANDLING.

HAND (GLOVE TYPE):

USE NITRILE OR NATURAL RUBBER GLOVES.

RESPIRATOR TYPE: SELF-CONTAINED SUPPLIED AIR

IN INADEQUATELY VENTILATED AREAS, A NIOSH/MSHA APPROVED (TC-19C) SUPPLIED AIR RESPIRATOR OR SELF-CONTAINED BREATHING APPARATUS IS REQUIRED.

OTHER PROTECTIVE EQUIPMENT:

WEAR IMPERVIOUS BODY COVERING (RUBBER APRON) AND BOOTS WHERE SPILLS OR SPLASHING OCCUR. A FACE SHIELD IS ALSO RECOMMENDED.

**PHYSICAL PROPERTIES**

BOILING POINT/RANGE:

-58 C (-72.4 F)

MELTING POINT:

NA

FREEZING POINT:

-168 C (-270.4 F)

MOLECULAR WEIGHT:

148.9

SPECIFIC GRAVITY (H<sub>2</sub>O=1):

1.54 @ 25 C

VAPOR PRESSURE (MM HG):

220 PSIA @ 20 C

VAPOR DENSITY (AIR=1):

5.14

SOLUBILITY IN H<sub>2</sub>O:

NEGLECTIBLE

% VOLATILES BY VOLUME:

100.0

APPEARANCE AND ODOR:

CLEAR, LIQUEFIED GAS WITH SLIGHT ETHEREAL (ETHER-LIKE) ODOR.

**REACTIVITY DATA**

STABILITY:

STABLE

CONDITIONS CONTRIBUTING TO INSTABILITY:

THERMAL

DECOMPOSITION

THERMAL DECOMPOSITION DUE TO EXPOSURE TO HEAT (>800 F) OR FIRE.

INCOMPATIBILITY-AVOID CONTACT WITH:

STRONG

ALKALIS

AVOID CONTACT WITH ALKALINE EARTH METALS, ALKALIS, POWDERED ALUMINUM, ZINC AND BERYLLIUM SINCE THEY MAY REACT WITH OR ACCELERATE DECOMPOSITION OF THIS MATERIAL.

HAZARDOUS DECOMPOSITION THERMAL AND OTHER:

IRRITATING AND / OR TOXIC GASES DUE TO DECOMPOSITION OF THE PRODUCT MAY BE GENERATED DURING A FIRE. THESE INCLUDE HYDROBOMIC, HYDROCHLORIC AND HYDROFLUORIC ACIDS. POSSIBLY FREE HALIDES AND CARBONYL HALIDES.

CONDITIONS TO AVOID:

HEAT FLAMES

EXPOSURE TO FLAMES OR HOT SURFACES ABOVE 850 F.



## TOXICITY

ROUTE	ANIMAL	DATA
ORAL	NA	NE
DERMAL	NE	NE. SEE TOXICITY COMMENTS.
INHALATION	RAT	LC50= 416MG/KG

### TOXIC EFFECTS/ROUTES OF ENTRY

#### EYE EFFECTS: IRRITANT

VAPOR IS IRRITATING TO EYES. LIQUID IS IRRITATING TO EYES AND MAY CAUSE TISSUES TO FREEZE.

#### SKIN EFFECTS: IRRITANT

SLIGHT IRRITANT. CONTACT WITH LIQUID MAY CAUSE FROSTBITE.

### OTHER TOXIC EFFECTS:

THIS PRODUCT DOES NOT CONTAIN ANY COMPONENTS LISTED BY NTP OR IARC OR REGULATED BY OSHA AS CARCINOGENS.

### TARGET ORGAN TOXIN:

TARGET ORGANS AFFECTED BY EXPOSURE TO THIS MATERIAL ARE: EYES, SKIN, CENTRAL NERVOUS SYSTEM, RESPIRATORY SYSTEM, HEART.

### TOXICITY COMMENTS:

MILDLY TOXIC BY INHALATION, AFFECTING THE CENTRAL NERVOUS SYSTEM. AT CONCENTRATIONS >20,000 PPM, IRREGULARITIES IN THE CENTRAL NERVOUS SYSTEM AND CARDIAC MUSCLE ARE EXHIBITED.

EARLY HUMAN EXPERIENCE INDICATED THAT HIGH VAPOR CONCENTRATION (>20%) MAY CAUSE CONFUSION, PULMONARY IRRITATION, TREMORS AND RARELY COMA, BUT THAT THESE EFFECTS WERE GENERALLY TRANSIENT.

EXCESSIVE SKIN CONTACT WITH LIQUID FLUOROCARBONS SHOULD BE MINIMIZED TO PREVENT DEFATTING OF SKIN.

NO EFFECTS FROM CHRONIC EXPOSURE ARE KNOWN.

## DISPOSAL PROCEDURES

RECOVERED MATERIAL CAN BE INCINERATED IN A FURNACE WHERE PERMITTED, OBSERVING ALL LOCAL, STATE AND FEDERAL REGULATIONS.

CONSULT FEDERAL, STATE, OR LOCAL AUTHORITIES FOR PROPER DISPOSAL PROCEDURES.



**SHIPPING INFORMATION**

**DOMESTIC--OTHER THAN AIR (DOT)**

PROPER SHIPPING NAME: BROMOTRIFLUOROMETHANE (R-13B1)

UN NUMBER: 1009

HAZARD CLASS: 2.2 (NON-FLAMMABLE GAS)

DOT LABELS: 2.2 (NON-FLAMMABLE GAS)

DOT PLACARD: NON-FLAMMABLE GAS

**PROPER SHIPPING DESCRIPTION:** BROMOTRIFLUOROMETHANE, 2.2, UN1009

**ADDITIONAL INFORMATION**

SARA HAZARD NOTIFICATION: THIS PRODUCT CONTAINS A SUBSTANCE WHICH IS DEFINED AS TOXIC CHEMICAL UNDER, AND SUBJECT TO THE REPORTING REQUIREMENTS OF, SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372. SEE INGREDIENTS-HAZARD CLASSIFICATION SECTION FOR LISTED CHEMICAL.

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**DATE OF LATEST REVISION/REVIEW:**  
**PERSON RESPONSIBLE FOR MSDS:**

8/03

Ray Madariaga

