

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: HYDROGEN BROMIDE

TRADE NAMES/SYNONYMS:

MTG MSDS 50; HYDROBROMIC ACID; ANHYDROUS HYDROBROMIC ACID; HYDROGEN MONOBROMIDE; HYDROGEN BROMIDE (HBR); HYDROGEN BROMIDE (H₂BR₂); UN 1048; HBR; MAT11140; RTECS MW3850000

CHEMICAL FAMILY: acids, inorganic

PRODUCT USE: industrial

CREATION DATE: Mar 07 1990

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: HYDROGEN BROMIDE

CAS NUMBER: 10035-10-6

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=0 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: colorless

PHYSICAL FORM: gas

ODOR: pungent odor

MAJOR HEALTH HAZARDS: respiratory tract burns, skin burns, eye burns, mucous membrane burns

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat.

POTENTIAL HEALTH EFFECTS:



INHALATION:

SHORT TERM EXPOSURE: burns, nausea, difficulty breathing, headache, dizziness, bluish skin color, lung congestion

LONG TERM EXPOSURE: digestive disorders

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation (possibly severe)

LONG TERM EXPOSURE: same as effects reported in short term exposure

EYE CONTACT:

SHORT TERM EXPOSURE: burns, tearing, blindness

LONG TERM EXPOSURE: same as effects reported in short term exposure

INGESTION:

SHORT TERM EXPOSURE: burns, nausea, vomiting, diarrhea, stomach pain, difficulty breathing, kidney damage, convulsions, coma

LONG TERM EXPOSURE: same as effects reported in short term exposure

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. Avoid gastric lavage or emesis.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Negligible fire hazard. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Do not get water inside container. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of

tanks. Keep unnecessary people away, isolate hazard area and deny entry.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

FLASH POINT: Not available

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTOIGNITION: Not available

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Do not get water inside container. Keep unnecessary people away, isolate hazard area and deny entry. Small spills: Flood with water. Large spills: Dike for later disposal. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Protect from physical damage. Store in a cool, dry place. Store in a well-ventilated area. Keep separated from incompatible substances.

HANDLING: Subject to handling regulations: U.S. OSHA 29 CFR 1910.119.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

HYDROGEN BROMIDE:

3 ppm (10 mg/m³) OSHA TWA

3 ppm (10 mg/m³) OSHA ceiling (vacated by 58 FR 35338, June 30, 1993)

2 ppm ACGIH ceiling

3 ppm (10 mg/m³) NIOSH recommended ceiling

VENTILATION: Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

30 ppm

Any supplied-air respirator operated in a continuous-flow mode.

Any powered, air-purifying respirator with acid gas cartridge(s).

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted acid gas canister.

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

Emergency or planned entry into unknown concentrations or IDLH conditions -

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape -

Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted acid gas canister.

Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

COLOR: colorless

ODOR: pungent odor

MOLECULAR WEIGHT: 80.92

MOLECULAR FORMULA: H-BR

BOILING POINT: -89 F (-67 C)

FREEZING POINT: -123 F (-86 C)

DECOMPOSITION POINT: Not available

VAPOR PRESSURE: 15750 mmHg @ 20 C

VAPOR DENSITY (air=1): 2.8

SPECIFIC GRAVITY (water=1): 2.16 @ -67 C

DENSITY: 3.5 g/L @ 0 C

WATER SOLUBILITY: 194%

PH: acidic in solution

VOLATILITY: Not applicable

ODOR THRESHOLD: Not available

EVAPORATION RATE: Not applicable

VISCOSITY: Not available

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

SOLVENT SOLUBILITY:

Slightly Soluble: alcohol

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: bases, combustible materials, halogens, oxidizing materials

HAZARDOUS DECOMPOSITION:

Decomposition products on contact with water or moisture: hydrobromic acid

Thermal decomposition products: miscellaneous decomposition products

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

HYDROGEN BROMIDE:

TOXICITY DATA: 2858 ppm/1 hour(s) inhalation-rat LC50

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

ACUTE TOXICITY LEVEL:

Moderately Toxic: inhalation

TARGET ORGANS: respiratory system, teeth

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: No data available.

INVERTEBRATE TOXICITY: No data available.

ALGAL TOXICITY: No data available.

FATE AND TRANSPORT:

BIODEGRADATION: No data available.

ABIOTIC DEGRADATION: Dissociates in water to H⁺ and Br⁻ ions.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Hydrogen bromide, anhydrous

ID NUMBER: UN1048

HAZARD CLASS OR DIVISION: 2.3

LABELING REQUIREMENTS: 2.3; 8

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: Forbidden

ADDITIONAL SHIPPING DESCRIPTION: Toxic-Inhalation Hazard Zone C



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Hydrogen bromide, anhydrous

UN NUMBER: UN1048

CLASS: 2.3; 8

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):

ACUTE: Yes

CHRONIC: No

FIRE: No

REACTIVE: No

SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated.

OSHA PROCESS SAFETY (29 CFR 1910.119):

HYDROGEN BROMIDE: 5000 LBS TQ

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: A, E.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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