

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: BUTYL MERCAPTAN

TRADE NAMES/SYNONYMS:

MTG MSDS 140; 1-BUTANETHIOL; N-BUTANETHIOL; BUTANETHIOL; N-BUTYL MERCAPTAN; 1-BUTYL MERCAPTAN; N-BUTYL THIOALCOHOL; BUTYLTHIOL; N-BUTYLTHIOL; THIOBUTYL ALCOHOL; 1-MERCAPTOBUTANE; NCI-C60866; STCC 4909133; UN 2347; C4H10S; MAT03580; RTECS EK630000

CHEMICAL FAMILY: mercaptans

CREATION DATE: Jan 24 1989

REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: BUTYL MERCAPTAN
CAS NUMBER: 109-79-5
PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0



EMERGENCY OVERVIEW:

COLOR: colorless to yellow

PHYSICAL FORM: liquid

ODOR: skunk-like odor

MAJOR HEALTH HAZARDS: central nervous system depression

PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EXPOSURE: irritation, lack of sense of smell, fever, nausea, vomiting, diarrhea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, bluish skin color, lung congestion, kidney damage, liver damage, paralysis, effects on the brain, convulsions, unconsciousness, coma

LONG TERM EXPOSURE: weakness, convulsions

SKIN CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: dermatitis

EYE CONTACT:

SHORT TERM EXPOSURE: irritation

LONG TERM EXPOSURE: conjunctivitis

INGESTION:

SHORT TERM EXPOSURE: nausea, diarrhea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, bluish skin color, kidney damage, liver damage, coma

LONG TERM EXPOSURE: no information is available

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 medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

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

INGESTION: Never make an unconscious person vomit or drink fluids. Give sodium bicarbonate solution. When vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

ANTIDOTE: amyl nitrite, inhalation; sodium nitrite, intravenous; pyridoxine, intravenous; urea, intravenous.
CAUTION! Get medical attention immediately.

NOTE TO PHYSICIAN: For inhalation, consider oxygen. For ingestion, consider gastric lavage.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Vapor/air mixtures are explosive. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

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

FIRE FIGHTING: Move container from fire area if it can be done without risk. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: 36 F (2 C) (OC)

FLAMMABILITY CLASS (OSHA): IB

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition or combustion products: oxides of carbon, oxides of sulfur, hydrogen sulfide

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

BUTYL MERCAPTAN:

10 ppm (35 mg/m³) OSHA TWA

0.5 ppm (1.8 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

0.5 ppm ACGIH TWA

0.5 ppm (1.8 mg/m³) NIOSH recommended ceiling 15 minute(s)

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of

material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles. 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.

5 ppm

Any air-purifying half-mask respirator equipped with organic vapor cartridge(s).

Any supplied-air respirator.

12.5 ppm

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

Any powered, air-purifying respirator with organic vapor cartridge(s).

25 ppm

Any air-purifying full-facepiece respirator equipped with organic vapor cartridge(s).

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

Any powered, air-purifying respirator with a tight-fitting facepiece and organic vapor cartridge(s).

Any self-contained breathing apparatus with a full facepiece.

Any supplied-air respirator with a full facepiece.

500 ppm

Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode.

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 organic vapor canister.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

COLOR: colorless to yellow

ODOR: skunk-like odor

TASTE: bitter taste

MOLECULAR WEIGHT: 90.19

MOLECULAR FORMULA: C-H3-C-H2-C-H2-C-H2-S-H

BOILING POINT: 207-215.1 F (97.2-101.7 C)
FREEZING POINT: -176.6 F (-115.9 C)
VAPOR PRESSURE: 83 mmHg @ 25 C
VAPOR DENSITY (air=1): 3.1
SPECIFIC GRAVITY (water=1): 0.83679 @ 25 C
WATER SOLUBILITY: 0.595 g/L (slightly soluble)
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: 0.0001-0.001 ppm
EVAPORATION RATE: Not available
VISCOSITY: 0.56 cP @ 20 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: alcohol, ether, liquid hydrogen sulfide
Slightly Soluble: chloroform

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers.

INCOMPATIBILITIES: acids, oxidizing materials, nitric acid, calcium hypochlorite

HAZARDOUS DECOMPOSITION:

Thermal decomposition or combustion products: oxides of carbon, oxides of sulfur, hydrogen sulfide

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

BUTYL MERCAPTAN:

IRRITATION DATA: 83 mg eyes-rabbit

TOXICITY DATA: 4020 ppm/4 hour(s) inhalation-rat LC50; 1500 mg/kg oral-rat LD50

ACUTE TOXICITY LEVEL:

Moderately Toxic: inhalation, ingestion

TARGET ORGANS: central nervous system

REPRODUCTIVE EFFECTS DATA: Available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 80000 ug/L 21 hour(s) (Hematological) Channel catfish (*Ictalurus punctatus*)

FATE AND TRANSPORT:

KOW: 50003.45 (log = 4.704) (estimated from water solubility)

KOC: 410 (log = 2.62) estimated

HENRY'S LAW CONSTANT: 4.5 E -3

BIOCONCENTRATION: 16.63 (estimated from water solubility)

ENVIRONMENTAL SUMMARY: Leaches through the soil or the sediment at a moderate rate. Accumulates very little in the bodies of living organisms. Highly volatile from water.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Butyl mercaptans

ID NUMBER: UN2347

HAZARD CLASS OR DIVISION: 3

PACKING GROUP: II

LABELING REQUIREMENTS: 3



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Butyl mercaptan

UN NUMBER: UN2347

CLASS: 3

PACKING GROUP/CATEGORY: II

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: Yes

REACTIVE: No

SUDDEN RELEASE: No

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

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:

California Proposition 65: Not regulated.

CANADIAN REGULATIONS:

WHMIS CLASSIFICATION: B2, D1B.

NATIONAL INVENTORY STATUS:

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

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Listed on DSL.

16. OTHER INFORMATION

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