1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Matheson Tri-Gas, Inc.

The telephone numbers listed below are emergency numbers, please contact your local branch for routine inquiries.

**USA**
959 Route 46 East
Parsippany, New Jersey
07054-0624 USA
Phone: 973-257-1100

**CANADA**
530 Watson Street
Whitby, Ontario
L1N 5R9 Canada
Phone: 905-668-3570

**SUBSTANCE:** TERT-BUTYL MERCAPTAN
SYMBOL: \( \text{C}_4\text{H}_{10}\text{S} \)

TRADE NAMES/SYNONYMS:
2-METHYL-2-PROPANETHIOL; TERT-BUTANETHIOL; TERT-BUTYLTHIOL; 1,1-DIMETHYLETHANETHIOL; 2-ISOBUTANETHIOL; 2-PROPANETHIOL, 2-METHYL-; C4H10S; MAT27841; RTECS TZ7660000

CHEMICAL FAMILY: mercaptans

CREATION DATE: Jan 24 1989
REVISION DATE: Mar 16 1999

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TERT-BUTYL MERCAPTAN

CAS NUMBER: 75-66-1

EC NUMBER (EINECS): 200-890-2

PERCENTAGE: 100.0

3. HAZARDS IDENTIFICATION

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

WHMIS CLASSIFICATION: BD2

EC CLASSIFICATION (CALCULATED):
F Highly Flammable

R 11

EMERGENCY OVERVIEW:

Color: colorless

Physical Form: liquid
Odor: skunk-like odor

Major Health Hazards: No significant target effects reported.

Physical Hazards: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:
  - **Short Term Exposure:** irritation, lack of sense of smell, nausea, vomiting, diarrhea, difficulty breathing, headache, symptoms of drunkenness, bluish skin color, lung congestion, kidney damage, convulsions, coma
  - **Long Term Exposure:** no information on significant adverse effects

SKIN CONTACT:
  - **Short Term Exposure:** irritation
  - **Long Term Exposure:** same as effects reported in short term exposure

EYE CONTACT:
  - **Short Term Exposure:** mild irritation
  - **Long Term Exposure:** no information is available

INGESTION:
  - **Short Term Exposure:** nausea, vomiting, diarrhea, symptoms of drunkenness, bluish skin color, coma
  - **Long Term Exposure:** no information on significant adverse effects

CARCINOGEN STATUS:
- OSHA: N
- NTP: N
- IARC: N

4. FIRST AID MEASURES

INHALATION:
Remove from exposure immediately. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

SKIN CONTACT:
Remove contaminated clothing, jewelry, and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention, if needed.

EYE CONTACT:
Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

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 ingestion, consider gastric lavage.
5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS:
Severe explosion 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, alcohol resistant 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. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. 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. Water may be ineffective.

FLASH POINT:
<-20 F (-29 C) (CC)

FLAMMABILITY CLASS (OSHA):
IB

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


8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

TERT-BUTYL MERCAPTAN:
No occupational exposure limits established.

**VENTILATION:** Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. 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:** Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.

- Any chemical cartridge respirator with organic vapor cartridge(s).
- Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
- Any air-purifying respirator with a full facepiece and an organic vapor canister.

For Unknown Concentrations or Immediately Dangerous to Life or Health -

- Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply.
- Any self-contained breathing apparatus with a full facepiece.

---

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** liquid

**COLOR:** colorless

**ODOR:** skunk-like odor

**MOLECULAR WEIGHT:** 90.18

**MOLECULAR FORMULA:** (C-H3)3-C-S-H3-C-S-H

**BOILING POINT:** 147 F (64 C)

**FREEZING POINT:** 34 F (1 C)

**VAPOR PRESSURE:** 304 mmHg

**VAPOR DENSITY (air=1):** 3.1

**SPECIFIC GRAVITY (water=1):** 0.8002

**WATER SOLUBILITY:** slightly soluble

**PH:** Not available

**VOLATILITY:** Not available

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not available
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

SOLVENT SOLUBILITY:
Soluble: alcohol, ether, liquid hydrogen sulfide

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

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: hydrogen sulfide, oxides of sulfur, carbon

POLYMERIZATION:
Will not polymerize.

11. TOXICOLOGICAL INFORMATION

TERT-BUTYL MERcaptAN:

IRRITATION DATA:
84 mg eyes-rabbit

TOXICITY DATA:
22200 ppm/4 hour(s) inhalation-rat LC50; 4729 mg/kg oral-rat LD50

ACUTE TOXICITY LEVEL:
Moderately Toxic: ingestion
Slightly Toxic: inhalation

12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORT INFORMATION

Up to Table of Contents
15. REGULATORY INFORMATION

U.S. REGULATIONS:
TSCA INVENTORY STATUS: Y

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CERCLA SECTION 103 (40CFR302.4): N
SARA SECTION 302 (40CFR355.30): N
SARA SECTION 304 (40CFR355.40): N
SARA SECTION 313 (40CFR372.65): N

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40CFR370.21):
   ACUTE: N
   CHRONIC: N
   FIRE: Y
   REACTIVE: N
   SUDDEN RELEASE: N


STATE REGULATIONS:
   California Proposition 65: N

EUROPEAN REGULATIONS:

EC NUMBER (EINECS): 200-890-2

EC RISK AND SAFETY PHRASES:

16. OTHER INFORMATION

Matheson Tri-Gas makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty of merchantability or fitness for use. Matheson Tri-Gas shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

©Copyright 1984-1999 MDL Information Systems. ©Copyright 2000 Matheson Tri-Gas. All rights reserved.