1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product name : 2-Methyl-2-propanethiol
CAS-No. : 75-66-1

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Research and Development

1.3 Details of the supplier of the safety data sheet
Company : GTI Laboratories Supplies
5611 Northdale Street
HOUSTON TX 77087

Telephone : +1 840-240-4719

1.4 Emergency telephone number
Emergency Phone # : +1 840-240-4719

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225 Skin sensitization (Category 1), H317 Acute aquatic toxicity (Category 2), H401 Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)
H225 : Highly flammable liquid and vapor.
H317 : May cause an allergic skin reaction.
H411 : Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 : Keep container tightly closed.
P240 : Ground/bond container and receiving equipment.
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 : Use only non-sparking tools.
P243 : Take precautionary measures against static discharge.
P261 : Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/ eye protection/ face protection. IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. If skin irritation or rash occurs: Get medical advice/ attention. Wash contaminated clothing before reuse. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. Collect spillage. Store in a well-ventilated place. Keep cool. Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : tert-Butyl mercaptan TBM

Formula : C₄H₁₀S
Molecular weight : 90.19 g/mol
CAS-No. : 75-66-1
EC-No. : 200-890-2

Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Methylpropane-2-thiol</td>
<td>Flam. Liq. 2; Skin Sens. 1; Aquatic Acute 2; Aquatic Chronic 2; H225, H317, H411</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available
5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, sulfur oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment

Eye/face protection
Face shield and safety glasses, use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves, must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: clear, liquid
   Color: colorless

b) Odor
   unpleasant

c) Odor Threshold
   No data available

d) pH
   5.8

e) Melting point/freezing point
   Melting point/range: -0.5 °C (31.1 °F) - lit.

f) Initial boiling point and boiling range
   62 - 65 °C (144 - 149 °F) - lit.

g) Flash point
   -24.99 °C (-12.98 °F) - closed cup

h) Evaporation rate
   No data available

i) Flammability (solid, gas)
   No data available
j) Upper/lower flammability or explosive limits
No data available

k) Vapor pressure 404.6 hPa (303.5 mmHg) at 37.7 °C (99.9 °F)

l) Vapor density 3.11 - (Air = 1.0)

m) Relative density 0.8 g/cm³ at 25 °C (77 °F)

n) Water solubility 1.4 g/l at 20 °C (68 °F) at 7 hPa (5 mmHg) - soluble

o) Partition coefficient: n-octanol/water log Pow: 1.786

p) Auto-ignition temperature 255 °C (491 °F) at 1,013 hPa (760 mmHg)

q) Decomposition temperature No data available

r) Viscosity No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information
Surface tension 21 mN/m at 20 °C (68 °F)
Relative vapor density 3.11 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapors may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Bases, oxidizing agents, reducing agents, alkali metals

10.6 Hazardous decomposition products
Other decomposition products - No data available. In the event of fire: see section 5.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male - 4,729 mg/kg
LC50 Inhalation - Rat - 4 h - 22200 ppm

LC50 Inhalation - Rat - male - 4 h - 26643 ppm
LD50 Dermal - Rabbit - male - > 2,000 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
Buehler Test - Guinea pig
May cause sensitization by skin contact.

Germ cell mutagenicity
in vitro assay
S. typhimurium
Result: negative

Mouse - male and female
Result: negative

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity
RTECS: TZ7660000
Rat - female - Gavage - NOAEL: 50 mg/kg
Nausea, headache, and vomiting

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 34 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates
static test EC50 - Daphnia magna (Water flea) - 6.7 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae
static test EC50 - Pseudotrichodesmium subcapitata - 24 mg/l - 72 h
(OECD Test Guideline 201)

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available
12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

(Inside 48 Contiguous USA, Air/Ground)
UN number: 2347 Class: 3 Packing group: II Proper shipping name: Butyl mercaptans
(Special Exception) Small Quantity =>30m

(Outside 48 Contiguous USA, Air)
UN number: 2347 Class: 3 Packing group: II Proper shipping name: Butyl mercaptans
(Special Exception) Dangerous Goods in Excepted Quantities =<30ml

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
2-Methylpropane-2-thiol
CAS-No. 75-66-1
Revision Date 1993-04-24

Pennsylvania Right To Know Components
2-Methylpropane-2-thiol
CAS-No. 75-66-1
Revision Date 1993-04-24

New Jersey Right To Know Components
2-Methylpropane-2-thiol
CAS-No. 75-66-1
Revision Date 1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

<table>
<thead>
<tr>
<th>Aquatic Acute</th>
<th>Acute aquatic toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Chronic</td>
<td>Chronic aquatic toxicity</td>
</tr>
<tr>
<td>Flam. Liq.</td>
<td>Flammable liquids</td>
</tr>
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<td>Highly flammable liquid and vapor.</td>
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</tr>
<tr>
<td>Skin Sens.</td>
<td>Skin sensitization</td>
</tr>
</tbody>
</table>

**HMIS Rating**

- Health hazard: 2
- Chronic Health Hazard:
- Flammability: 3
- Physical Hazard: 0

**NFPA Rating**

- Health hazard: 2
- Fire Hazard: 3
- Reactivity Hazard: 0

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. GTI Laboratories Supplies and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

**Preparation Information**

GTI Laboratories Supplies
Product Safety & Health