Material Safety Data Sheet
2-Methyl-2-propanethiol, 99%

MSDS# 90384

Section 1 - Chemical Product and Company Identification

MSDS Name: 2-Methyl-2-propanethiol, 99%
Catalog Numbers: AC149020000, AC149020025, AC149020500, AC149021000, AC149025000
Synonyms: tert-Butyl mercaptan.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticaalana 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call:
800-ACROS-01
For information in Europe, call:
+32 14 57 52 11
Emergency Number, Europe:
+32 14 57 52 99
Emergency Number US:
201-796-7100
CHEMTREC Phone Number, US:
800-424-9300
CHEMTREC Phone Number, Europe:
703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 75-66-1
Chemical Name: 2-Methyl-2-propanethiol
%: 99
EINECS#: 200-890-2

Hazard Symbols: XN F
Risk Phrases: 11 36 43

Section 3 - Hazards Identification

EMERGENCY OVERVIEW


Potential Health Effects

Eye: Causes eye irritation.

Skin: May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May be harmful if absorbed through the skin. Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Mercaptans may cause nausea and headache. Exposure to high concentrations of mercaptans can produce unconsciousness with cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), cold extremities and rapid pulse. May cause lung damage.

Ingestion: Vapors may cause dizziness or suffocation. Inhalation of high concentrations may cause pulmonary edema.
Inhalation: Exposure to high concentrations of mercaptans can produce unconsciousness with cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), cold extremities and rapid pulse. Mercaptans may cause nausea and headache.

Chronic: May cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood), acidosis, and quick, shallow breathing.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Absorption of this product into the body may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Moderate degrees of cyanosis need to be treated only by supportive measures: bed rest and oxygen inhalation. If cyanosis is severe, intravenous injection of Methylene Blue, 1mg/kg of body weight may be of value.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May polymerize explosively when involved in a fire.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Use agent most appropriate to extinguish fire. Do NOT use straight streams of water.

Autoignition Temperature: Not available

Flash Point: -26 deg C ( -14.80 deg F)

Explosion Limits: Lower: N/A

Explosion Limits: Upper: N/A

NFPA Rating: health: 1; flammability: 3; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep away from heat, sparks and flame. Use only in a chemical fume hood. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
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OSHA Vacated PELs: 2-Methyl-2-propanethiol: None listed

Engineering Controls:
Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: clear, colorless
Odor: skunk-like - stench
pH: Not available
Vapor Pressure: 305 mmHg @ 37.8
Vapor Density: 3.0
Evaporation Rate: Not available
Viscosity: 0.638 cPs 20.00
Boiling Point: 62 deg C (143.60°F)
Freezing/Melting Point: 1 deg C (33.80°F)
Decomposition Temperature: Not available
Solubility in water: slightly soluble
Specific Gravity/Density: .8000g/cm3
Molecular Formula: C4H10S
Molecular Weight: 90.18

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Dangerous when heated to decomposition, emits highly toxic fumes of carbon and sulfur oxides.
Conditions to Avoid: Ignition sources, excess heat, strong oxidants.
Incompatibilities with Other Materials
Oxidizing agents, reducing agents, acids, bases, alkali metals.
Hazardous Decomposition Products
Carbon monoxide, oxides of sulfur, carbon dioxide, hydrogen sulfide.
Hazardous Polymerization
Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 75-66-1: TZ7660000
RTECS:
CAS# 75-66-1: Draize test, rabbit, eye: 84 mg;
Inhalation, mouse: LC50 = 16500 ppm/4H;
Inhalation, rat: LC50 = 22200 ppm/4H;
Oral, rat: LD50 = 4729 mg/kg;

Carcinogenicity: 2-Methyl-2-propanethiol - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: The toxicological properties have not been fully investigated.
Section 12 - Ecological Information

Other: No information available.

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: BUTYL MERCAPTANS
Hazard Class: 3
UN Number: UN2347
Packing Group: II
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: XN F
Risk Phrases:
  R 11 Highly flammable.
  R 36 Irritating to eyes.
  R 43 May cause sensitization by skin contact.
Safety Phrases:
  S 16 Keep away from sources of ignition - No smoking.
  S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  S 36/37 Wear suitable protective clothing and gloves.
  S 38 In case of insufficient ventilation, wear suitable respiratory equipment.

WGK (Water Danger/Protection)
  CAS# 75-66-1: Not available
Canada
  CAS# 75-66-1 is listed on Canada's DSL List
  Canadian WHMIS Classifications: B2, D2B
  This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
  CAS# 75-66-1 is not listed on Canada's Ingredient Disclosure List.

US Federal
TSCA
  CAS# 75-66-1 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/01/1998
Revision #6 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make
their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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