1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name: Benzyl mercaptan
Product Code: SC-353053

Recommended use of the chemical and restrictions on use
For research use only. Not intended for diagnostic or therapeutic use.

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification
Acute toxicity - Oral: Category 4
Acute toxicity - Inhalation (Dusts/Mists): Category 2
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2A
Flammable liquids: Category 4

Label elements
Signal word: Danger
Hazard statements:
- Harmful if swallowed
- Fatal if inhaled
- Causes skin irritation
- Causes serious eye irritation
- Combustible liquid

Symbols/Pictograms

Precautionary Statements - Prevention
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Wear respiratory protection
- Wear protective gloves/protective clothing/eye protection/face protection
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep cool
Precautionary Statements - Response

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)
Not applicable

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight %</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl mercaptan</td>
<td>100-53-8</td>
<td>&gt;98</td>
<td>= 493 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First Aid Measures

<table>
<thead>
<tr>
<th>General advice</th>
<th>Eye contact</th>
<th>Skin Contact</th>
<th>Inhalation</th>
<th>Ingestion</th>
<th>Self-protection of the first aider</th>
</tr>
</thead>
<tbody>
<tr>
<td>If symptoms persist, call a physician. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing.</td>
<td>Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.</td>
<td>Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.</td>
<td>Remove to fresh air. Call a physician. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.</td>
<td>Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting.</td>
<td>Use personal protective equipment as required.</td>
</tr>
</tbody>
</table>

Most important symptoms and effects, both acute and delayed
Symptoms
No information available.

Indication of any immediate medical attention and special treatment needed
Note to physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
None.

Specific hazards arising from the chemical
Specific hazards arising from the chemical
No information available.

Hazardous combustion products
Hydrogen sulfide. Carbon oxides.

Explosion data
Sensitivity to Mechanical Impact
No information available.

Sensitivity to Static Discharge
No information available.

Protective equipment and precautions for firefighters
Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Personal precautions
Ensure adequate ventilation, especially in confined areas.

Environmental precautions
Environmental precautions
Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up
Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Cover liquid spill with sand, earth or other non-combustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling
Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Store at room temperature.

Incompatible materials
None known based on information supplied.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls
Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment
Eye/face protection
Tight sealing safety goggles.

Skin and Body Protection
Wear protective gloves and protective clothing.

Respiratory protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>-30 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>194 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>70 °C</td>
</tr>
<tr>
<td>Density</td>
<td>1.053 g/mL</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
</tr>
<tr>
<td>Upper flammability limits</td>
<td>1%</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.5 mmHg</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Not applicable

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous polymerization
No information available.
Conditions to avoid
- Extremes of temperature and direct sunlight.

Incompatible materials
- Strong oxidizing agents.

Hazardous Decomposition Products

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
- Inhalation: No data available.
- Eye contact: No data available.
- Skin Contact: No data available.
- Ingestion: No data available.

Information on toxicological effects
- Symptoms: No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure
- Chronic Toxicity: No information available.

Numerical measures of toxicity - Product Information
- Unknown acute toxicity: No information available.
The following values are calculated based on chapter 3.1 of the GHS document:
  - ATEmix (oral): 493 mg/kg
  - ATEmix (inhalation-dust/mist): 0 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity
- May cause long lasting harmful effects to aquatic life.

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence and degradability
- No information available.

Bioaccumulation
- No information available.

Mobility
- No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of wastes
- Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
- Do not reuse container.

Other Information
- Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

DOT
- UN/ID no: UN2810
- Hazard Class: 6.1
- Packing Group: III
- Proper shipping name: Toxic liquids, organic, n.o.s.
Description
UN2810, Toxic liquids, organic, n.o.s., 6.1, III
Emergency Response Guide Number
153

IMDG
UN/ID no
UN2810
Hazard Class
6.1
Packing Group
III
Proper shipping name
Toxic liquid, organic, n.o.s.
Description
UN2810, Toxic liquid, organic, n.o.s., 6.1, III
Special Provisions
223, 274
EmS-No
F-A, S-A

IATA
UN/ID no
UN2810
Hazard Class
6.1
Packing Group
III
Proper shipping name
Toxic liquid, organic, n.o.s.
Description
UN2810, Toxic liquid, organic, n.o.s., 6.1, III

15. REGULATORY INFORMATION

International Inventories
All of the components in the product are on the following Inventory lists
TSCA (United States): Canada (DSL/NDSL) Europe (EINECS/ELINCS/NLP) Australia (AICS) China (IECSC) ENCS (Japan): Philippines (PICCS)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>IECSC</th>
<th>KECL</th>
<th>PICCS</th>
<th>AICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzyl mercaptan</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X - Listed
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories
Acute health hazard
Yes
Chronic Health Hazard
No
Fire hazard
Yes
Sudden release of pressure hazard
No
Reactive hazard
No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
16. OTHER INFORMATION

Revision note                  No information available

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet