Product Safety Summary Sheet

DuPont™ Dimethyl Sulfate

Chemical Identification, Product Identification or Common Name:
CAS number: 77-78-1
CAS name: Dimethyl sulfate
EINECS Number: 201-058-1
IUPAC name: dimethyl sulphate
Common Name: DMS

Product Uses and Applications:
Dimethyl sulfate (DMS) is consumed in the manufacture of surfactants, fabric softeners, water treatment chemicals, pesticides, pharmaceuticals, and photographic chemicals.

Physical Properties of the Chemical or Product:
DMS is a colorless liquid with a boiling point of 371.8 degrees F (188.8 degrees C) and a melting point of -25.2 degrees F (-31.8 degrees C). DMS has no characteristic odor or other warning property.

Exposure Potential:

Workplace exposure:
Workers should follow the recommended safety measures contained within the (Material) Safety Data Sheet ((M)SDS) and on any product packaging. Employees should be trained in the appropriate work processes and safety equipment to limit exposure to chemical substances. Occupational use of this substance is considered to be safe provided the recommended safety measures given in the (M)SDS are followed.
Consumer exposure:
DMS is sold only to industrial and other trained users. DMS is not sold to consumers. Consumer exposure to DMS is not expected.

Environmental exposure:
Equipment design, engineering controls and worker training reduce the discharge of DMS to the environment. Opportunities for environmental exposure can occur during manufacturing and use.

Health Information

Note: The information contained in this section may be useful to someone handling the pure substance. For more information on health hazards and recommended protective equipment, please refer to the (M)SDS.

Exposures may affect human health as follows:

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>The primary acute effects are burns to the skin and eyes. Symptoms of poisoning may appear several hours after exposure. DMS is absorbed through the skin, so dermal exposure may result in systemic toxicity. Acute systemic toxicity may include changes in liver function.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Causes severe eye and skin burns. Irritating to the mucous membranes, eyes, skin, and respiratory system.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Skin sensitizer.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Mutagen.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Probable human carcinogen.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Repeated low-level exposure may result in irritation of the mucous membranes, eyes, skin, and/or respiratory tract. Although other systemic effects are possible, the low irritation threshold of DMS suggests that irritation would occur before systemic toxicity.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Not a developmental toxin.</td>
</tr>
</tbody>
</table>

Environmental Information

Note: The results in the table below refer to testing performed with the non-formulated, undiluted chemical substance. The data does not replace the data given in the (M)SDS. For more information and recommended protective measures, please refer to the (M)SDS.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td>Toxic to fish.</td>
</tr>
<tr>
<td>Biodegradability</td>
<td>Readily biodegradable.</td>
</tr>
<tr>
<td>Persistence</td>
<td>Not persistent.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Bioaccumulation is unlikely.</td>
</tr>
</tbody>
</table>
Risk Management

Workplace Management:
Because of the health effects of DMS, reactions should be carried out in closed equipment or well-ventilated areas. Risk management measures for industrial site use include containment through engineering controls and the use of personal protective equipment (PPE) as appropriate. Always refer to the (Material) Safety Data Sheet ((M)SDS) for guidance on the appropriate personal protective equipment to be used and on the safe handling of this material.

Consumer Risk Management:
DMS is sold only to industrial and other trained users. DMS is not sold to consumers. Consumer exposure to DMS is not expected therefore consumer risk management is not required.

Regulatory Information:
Always refer to the (Material) Safety Data Sheet ((M)SDS) for guidance on regulatory restrictions that may govern the manufacture, sale, transportation, use and/or disposal of this chemical or product. Regulations may vary by region, country, state, county, city, or local government.

First Aid Information:
For all First Aid or Emergency information, consult the (Material) Safety Data Sheet ((M)SDS).

Information Sources:
Data is compiled from a variety of sources, including publicly available documents, internal data and other sources such as, but not limited to, Chemical Safety Reports and (Material) Safety Data Sheets ((M)SDS).

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