GPS Safety Summary

B-TEGME

Chemical Identity

Name: B-TEGME

CAS number: 30989-05-0

Molecular formula: $C_{21}H_{45}BO_{12}$

Structure

IUPAC name: tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate

BASF brand names: B-TEGME

For synonyms see end of document

Product Uses

B-TEGME is used as a component for brake fluids. No other major uses are reported. Generally the substance is used in industrial and/or professional settings.

Benefits

B-TEGME provides high boiling points.
Health Information

Human Health Safety Assessment
Note: The information contained in the table below may be useful to someone handling the concentrated substance such as a manufacturer or transporter. Consumers are not likely to come in contact with the concentrated substance. The data, while verifiable, are not intended to be comprehensive nor replace the data found in the (M)SDS.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Virtually nontoxic after single ingestion or single skin contact.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Not irritating to the skin and the eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Skin sensitizing effects were not observed in animal studies. The statement has been derived from products of similar structure or composition.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>No mutagenic effect was found in various tests with bacteria and mammalian cell culture.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>No adverse effects were observed after repeated exposure in animal studies. The statement has been derived from products of a similar structure or composition.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>No indications of a developmental toxic / teratogenic effect were seen in animal studies. The statement has been derived from a product of a similar structure or composition.</td>
</tr>
</tbody>
</table>

Environmental Information

Environment Safety Assessment
Note: The information in this chapter is intended to provide brief and general information of this substance’s environmental impact. The results in the table below refer to testing performed with the concentrated substance. The data contained in this section explain the relative effect of the concentrated substance on the environment, as defined by certain tests.

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Toxicity</td>
<td>With high probability acutely not harmful to aquatic organisms.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Accumulation in organisms is not to be expected.</td>
</tr>
</tbody>
</table>
Physical/Chemical Properties

Phys/Chem Safety Assessment

➢ B-TEGME is a yellowish liquid which is non flammable and non explosive.

Note: The results in the table below refer to testing performed with the concentrated substance. It is not intended to be comprehensive or to replace information found in the (M)SDS.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>&lt; -55°C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>345 °C at 1013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>146 °C at 1013 hPa</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No explosive properties</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>310 ± 5°C</td>
</tr>
</tbody>
</table>

Exposure Potential

➢ Workplace exposure: Based on the very low toxicity of B-TEGME exposure via oral and dermal route, and since no inhalation is expected because of the low vapor pressure of this substance, B-TEGME is considered to be without risk for workers in industrial settings and professional workers. B-TEGME released during manufacturing or handling is of no concern for the health of workers since it does not induce any adverse effects at relevant doses. Nevertheless, workers should follow the recommended safety measures in the extended Safety Data Sheet (eSDS).

➢ Consumer exposure: Consumer may come in contact with B-TEGME during use in or as functional fluids. Nevertheless, based on the very low toxicity of B-TEGME exposure via oral and dermal route, and since no inhalation is expected because of the low vapor pressure of this substance, B-TEGME is considered to be without risk for the consumer. B-TEGME released during handling is of no concern for the health of consumers since consumers will not come into contact with harmful levels of the substance. Nevertheless
consumers should always read product information before use and follow the label/use instructions.

- **Environmental exposure:** B-TEGME is with high probability not harmful to aquatic organisms and hence the substance is not considered to pose an unacceptable risk for the environment. It will almost entirely be removed by biodegradation during waste water treatment processes. Insignificant amounts that may reach surface waters will not exist in the environment for extended time periods due to degradation by microorganisms. Conclusively, all identified uses are safe for the environment based on the scientific facts summarized above and when carried out in compliance with recommended risk management measures and applicable regulations.

**Recommended Handling Measures**

*The recommended safety measures generally apply in contact with the concentrated substance. It is NOT intended to replace the comprehensive guidance found in the (M)SDS, only supplement it. Please refer to the (M)SDS for specific safety and first aid measures.*

When using concentrated chemicals always make sure that there is adequate ventilation. Always use appropriate chemical resistant gloves to protect your hands and skin and always wear eye protection such as chemical goggles. Do not eat, drink, or smoke where chemicals are handled, processed, or stored. Wash hands and skin following contact. If the substance gets into your eyes, rinse eyes thoroughly for at least 15 minutes with tap water and seek medical attention. For specific advice please consult the corresponding (Material) Safety Data Sheet of the substance.

All effluent releases that may include the substance must be directed to a (municipal) waste water treatment plant that removes the substance from the final releases to the receiving water.

**Regulatory Information / Classification and Labeling**

Under GHS substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the (M)SDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.
Note: The hazard statements and symbols presented here refer to the hazard properties of the concentrated substance and are meant to provide a brief overview of the substance’s labeling. It is not intended to be comprehensive or to replace information found in the (M)SDS.

Labeling according to UN GHS
UN GHS is the basis for country specific GHS labeling

Based on available data, labeling is currently not required.

Additional information

1. IFA GESTIS-database on hazardous substances
   http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp

2. Information on registered substance (ECHA)

Most commonly used synonyms

» Methyltriglykol-o-borat
» Ethanol, 2-[2-(2-methoxyethoxy)ethoxy]-, triester with boric acid (H3BO3) (8CI, 9CI)
» Triethylene glycol monomethyl ether orthoborate
» Trimethoxytriglycol orthoborate
» Triethylene glycol monomethyl ether borate (3:1)
» B-TEGME
» METHYLTRIGLYKOL-O-BORAT

Disclaimer

This Product Safety Summary is intended to provide a general overview of the chemical substance. It contains basic information and is not intended to provide emergency response information, medical information or treatment information. The summary cannot be relied on to provide in-depth safety and health information. In-depth safety and health information must be obtained from the Material Safety Data Sheet ((M)SDS) for the chemical substance.

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Contact

For further information on this substance or GPS safety summaries in general, please contact: info.gps@basf.com