GPS Safety Summary

**Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol**

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. This information must be obtained from the Material Safety Data Sheet ((M)SDS) for this chemical substance. Before handling or using Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol the relevant (M)SDS has to be consulted.

**Chemical Identity**

**Name:** Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

**CAS number:** no CAS number available

**Molecular formula:** not applicable

**Structure:**

Mixture of 2-(2-(2-butoxyethoxy)ethoxy)ethanol

\[ \text{OH} \]

and 3,6,9,12-tetraoxahexadecan-1-ol

\[ \text{OH} \]

**IUPAC name:**

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

**BASF brand names:**

TEGBE

Butyltriglycol

For synonyms see end of document

Date of Issue: June 2012
Product description and Uses

Butyltriglycol is a mixture mainly consisting of 2-(2-(2-Butoxyethoxy)ethoxy)ethanol (Triethylene glycol monobutyl ether CAS No.: 143-22-6) and 3,6,9,12-Tetraoxahexadecan-1-ol (Tetraethylene glycol monobutyl ether CAS No.: 1559-34-8).

Butyltriglycol is a low-volatility, high-boiling, clear, odourless liquid. It can be used as a solvent in paints, brake fluids and cleaners (e.g. floor cleaners and metal degreasers). Butyltriglycol is also used as low volatility solvents in printing inks and may be present in cutting oils in the metal working industry. Furthermore, it is also used as intermediate in the manufacture of plasticizers.

Health Information

Human Health Safety Assessment

<table>
<thead>
<tr>
<th>Effect Assessment</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity</td>
<td>Virtually nontoxic after single ingestion.</td>
</tr>
<tr>
<td></td>
<td>Of low toxicity after short-term skin contact.</td>
</tr>
<tr>
<td>No Irritation</td>
<td>Not irritating to the skin.</td>
</tr>
<tr>
<td></td>
<td>May cause severe damage to the eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>No sensitizing effect was observed in animal studies.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>The substance was not mutagenic in bacteria.</td>
</tr>
<tr>
<td></td>
<td>No mutagenic effect was found in various tests with microorganisms and mammalian cell culture. The statement has been derived from the properties of the individual components.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Repeated exposure to large quantities may affect certain organs.</td>
</tr>
<tr>
<td></td>
<td>Repeated dermal uptake of the substance did not cause substance-related effects.</td>
</tr>
<tr>
<td></td>
<td>The statements have been derived from the properties of the individual components.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Animal studies gave no indication of a fertility impairing and developmental toxic effect at doses which were not toxic to the parental animals. The statement has been derived from products of a similar structure or composition.</td>
</tr>
</tbody>
</table>
Note: For more information on the health hazards of this substance and recommended protective equipment, please refer to the relevant (M)SDS

Environmental Information

Environment Safety Assessment

<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 life.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

Note: For more information on the environmental hazards of this substance and recommended measures, please refer to the (M)SDS

Physical/Chemical Properties

Phys/Chem Safety Assessment

- Butyltriglycol is a clear, colorless liquid of faint odor. It is miscible with water, non-flammable and non-explosive.

<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>-35 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>278 °C at 1013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>131 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non-flammable</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Non-explosive</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>202 °C</td>
</tr>
</tbody>
</table>

Note: For further information, see the relevant (M)SDS
Exposure Potential

Butyltriglycol is an industrial solvent and chemical intermediate. Although BASF does not sell this substance for direct consumer use or directly to consumers, the public at large or consumers may be exposed to it from processing or use as a raw material for a variety of goods used by consumers or professionals. Based on the uses of this substance the public could be exposed through:

- **Workplace exposure**: Exposures via inhalation and/or dermal contact are the primary routes of exposure to butyltriglycol that are anticipated for the worker population. Exposure can occur either in a butyltriglycol manufacturing facility or in the various industrial facilities that use butyltriglycol. Those working with butyltriglycol in industrial operations could be exposed during maintenance, sampling, testing, or other procedures. Due to the very low vapor pressure, inhalation exposure is negligible. Workplace exposure is controlled and minimized by the use of proper occupational handling procedures and personal protection and safety equipment.

- **Consumer exposure**: Consumer exposure can result from handling products that contain Butyltriglycol, such as household products sold as cleaning products, paints, removers, inks and brake fluids. The use of these products is safe as long as the instructions provided by the manufacturer of the respective product are followed carefully.

- **Environmental exposure**: Butyltriglycol 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 is readily biodegradable and will therefore be degraded within the wastewater treatment process. Furthermore, it is not expected to accumulate in the food chain. 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

Before handling or using this substance, please consult the relevant (M)SDS. It contains the required handling measures, emergency response information, medical information or treatment information.
Regulatory Information / Classification and Labeling

Regulations exist that govern manufacture, sales, transportation, use and disposal of Butyltriglycol. These regulations may vary by city, state, country or geographic region. Information can be found by consulting the relevant (M)SDS.

Butyltriglycol was registered under REACH Regulation in the EU. 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.

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

Signal word:
Danger

Hazard statements:
H313: May be harmful in contact with skin
H318: Causes serious eye damage

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

» Mixture of ethylene glycol monobutyl ethers
» Mixture of ethylene glycol monoalkyl ethers
» Triethylene glycol n-butyl ether
» Butoxytriethylene glycol
» Butoxytriglycol
» Triethylene glycol monobutyl ether (TGBE)

Disclaimer

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Contact

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