GPS Safety Summary

Bis(2-ethylhexyl)adipate

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 bis(2-ethylhexyl)adipate the relevant (M)SDS has to be consulted.

Chemical Identity

Name: Bis(2-ethylhexyl)adipate

CAS number: 103-23-1

Molecular formula: C_{22}H_{42}O_{4}

Structure

IUPAC name:
bis(2-ethylhexyl) adipate

BASF brand names:
Plastomoll DOA

For synonyms see end of document
Product Description and Uses

Bis(2-ethylhexyl)adipate is a clear colorless liquid. It is commonly used in flexible polyvinyl chloride, natural rubber and offers good low temperature flexibility. In view of its good behavior at low temperatures, this substance is particularly suitable for use in the manufacture of plasticized PVC products with good low-temperature flexibility. Furthermore, it is used in adhesives, coatings and printing inks.

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 a single ingestion.</td>
</tr>
<tr>
<td></td>
<td>Virtually nontoxic after short-term inhalation.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Not irritating to the skin and eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Skin sensitizing effects were not observed.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not considered to be mutagenic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not considered to be carcinogenic.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Not considered to be toxic after repeated exposure.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Not considered to be toxic for reproduction.</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>No toxic effects in the range of the water solubility</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Does not significantly accumulate in organisms</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

- At room temperature bis(2-ethylhexyl)adipate is a clear colorless liquid with a low water solubility. It is not flammable or explosive and it has no oxidizing properties.

<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>-67.8 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>417 °C at 1013.25 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>196 °C</td>
</tr>
<tr>
<td>Flammability</td>
<td>Non flammable upon ignition</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Non explosive</td>
</tr>
<tr>
<td>Self-ignition temperature</td>
<td>377 °C</td>
</tr>
</tbody>
</table>

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

Exposure Potential

Bis(2-ethylhexyl)adipate is an industrial chemical. 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**: Based on the very low toxicity of bis(2-ethylhexyl)adipate exposure is considered to be of low risk. Bis(2-ethylhexyl)adipate 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. Workplace exposure is controlled and minimized by the use of proper occupational handling procedures and personal protection and safety equipment.

- **Consumer exposure**: Based on the very low toxicity of bis(2-ethylhexyl)adipate exposure is considered to be of low risk. The use in food packaging has been regulated in many countries in order to ensure consumer safety.
- **Environmental exposure:** Bis(2-ethylhexyl)adipate is with high probability acutely not harmful to aquatic organisms. It will almost entirely be removed by biodegradation during waste water treatment processes. Insignificant amounts that may reach surface water will not exist in the environment for extended time periods. 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 Labelling**

Regulations exist that govern manufacture, sales, transportation, use and disposal of bis(2-ethylhexyl)adipate. These regulations may vary by city, state, country or geographic region. Information can be found by consulting the relevant (M)SDS.

Bis(2-ethylhexyl)adipate 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

The product does not require a hazard warning label in accordance with GHS criteria.
Additional information

1. IFA GESTIS-database on hazardous substances  

2. Information on registered substance (ECHA)  

3. OECD SIDS (September 2001)  

Most commonly used synonyms

» Sometimes incorrectly named dioctyl adipate  
» DEHA  
» Adipic acid, bis(2-ethylhexyl) ester  
» Diethylhexyl adipate  
» Hexanedioic acid, bis(2-ethylhexyl) ester

Disclaimer

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Contact

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