GPS Safety Summary
Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate)

Chemical Identity

Name: Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate)

CAS number: 6683-19-8

Molecular formula: C_{73}H_{108}O_{12}

Product Uses

Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) is a highly effective, non discoloring stabilizer for organic substrates such as plastics, synthetic fibers, elastomers, adhesives, lubricants, waxes, oils and fats. Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) can be added to the oil, perfume or organic phase of personal care formulations. It protects these substrates against thermo-oxidative degradation.
Benefits

Pentaerythritol tetrakis(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) has good compatibility, high resistance to extraction and low volatility. It is odorless and tasteless. It can be used in combination with other additives such as light stabilizers and other functional stabilizers.

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 a single ingestion, single skin contact and by inhalation.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Not irritating to skin and eyes.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Not skin sensitizing.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not considered mutagenic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not considered carcinogenic.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Not considered toxic after repeated exposure.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Not considered toxic for reproduction.</td>
</tr>
</tbody>
</table>

Environmental Information

Environmental 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 life.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Poorly biodegradable.</td>
</tr>
</tbody>
</table>

Date of Issue 01. July 2011
Bioaccumulation potential | Not considered to be bioaccumulative.

Physical/Chemical Properties

Phys/Chem Safety Assessment

- Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) is a white powder. It is insoluble in water. It is non flammable, non-explosive and has no oxidising properties.

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>Solid</td>
</tr>
<tr>
<td>Melting / freezing point</td>
<td>117.1°C at 1013 hPa</td>
</tr>
<tr>
<td>Boiling point</td>
<td>281°C at 1013 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</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>Not applicable</td>
</tr>
</tbody>
</table>

Exposure Potential

- **Workplace exposure:** Based on the very low toxicity of Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) an exposure assessment is not considered necessary. CAS 6683-19-8 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.

- **Consumer exposure:** Based on the very low toxicity of Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) an exposure assessment is not considered necessary. Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) released during handling is of no concern for the health of consumers. Nevertheless consumer should always read the product information before use and follow the label/use instructions.
Environmental exposure: Based on the environmental hazard data currently available the toxicity of Pentaerythritol tetrakis(3,5-di-tert-butyl-4-hydroxyphenyl) propionate) towards aquatic organisms is considered to be low and it does not accumulate in the food chain. Therefore exposure estimation is not considered necessary and all identified uses of the substance are considered to be safe for the environment. 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 Labelling

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 labelling. It is not intended to be comprehensive or to replace information found in the (M)SDS.

Labeling according to UN GHS

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UN GHS is the basis for country specific GHS labeling

Based on the available data, no labeling is currently required.

Additional information

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

2. BASF Product Finder
   http://www.basf.com/group/corporate/de/Product-finder/index

3. Information on registered substance (ECHA)

4. CIBA substance information sheet (August 1998)

Most commonly used synonyms

» Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, 2,2-bis[[3-[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]-1-oxoproproxy]methyl]-1,3-propanediyl ester (9CI)
» Hydrocinnamic acid, 3,5-di-tert-butyl-4-hydroxy-, tetraester with pentaerythritol (7CI)
» Pentaerythritol, tetrakis[3,5-di-tert-butyl-4-hydroxyhydrocinnamate] (8CI)
» Neopentanetetrayl 3,5-di-tert-butyl-4-hydroxyhydrocinnamate

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