GPS Safety Summary

2-ethyl-2-[[1-oxoallyloxy)methyl]-1,3-propanediyl diacrylate

Chemical Identity

Name: 2-ethyl-2-[[1-oxoallyloxy)methyl]-1,3-propanediyl diacrylate

CAS number: 15625-89-5

Molecular formula: C₁₅H₂₀O₆

IUPAC name:
2,2-bis(prop-2-enoyloxy)methyl)butyl prop-2-enoate

BASF brand names:
Laromer TMPTA
Photomer 4006

For synonyms see end of document

Product Uses

TMPTA is used as Reactive Diluent in radiation curable systems. Main applications are coatings for furniture & flooring and industrial applications as well as printing inks and overprint varnishes

Benefits

TMPTA contains three polymerizable acrylic groups per molecule, which enable it to form copolymers of, for example, acrylic or methacrylic acids and their salts, amides, esters, vinyl acetate and styrene. Readily entering into addition reactions, it is also an important feedstock for chemical syntheses. The polymerizable groups allow the product to be used as a crosslinking component, e. g., in radiation-curabl e coatings, where it also acts as a reactive thinner. During curing, TMPTA becomes part of the polymer structure.

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>Of low toxicity after single ingestion. Virtually nontoxic after a single skin contact. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard.</td>
</tr>
<tr>
<td>Irritation</td>
<td>Skin and eye contact cause irritation.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>Caused skin sensitization in animal studies.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not considered mutagenic.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Repeated dermal exposure did not show a carcinogenic potential.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>After repeated exposure the prominent effect is local irritation.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>The substance did not cause malformations in animal studies. A substance of similar structure did not indicate a fertility impairing effect.</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>Toxic 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>

Physical/Chemical Properties
Phys/Chem Safety Assessment

- Trimethylolpropane triacrylate is a clear liquid. It 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; -20 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>390 °C, between 170 °C and 370 °C the substance shows an exothermal effect (possibly curing).</td>
</tr>
<tr>
<td>Flash point</td>
<td>194.5 °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>385 °C</td>
</tr>
</tbody>
</table>

Exposure Potential

- **Workplace exposure:** Trimethylolpropane triacrylate is classified as skin/eye irritating and as skin sensitizing. Working with this substance requires a stringent use of appropriate chemical resistant gloves, protective clothing and suitable eye protection if any skin/eye contact is foreseen. Workers should receive a task specific training on how to use the protective equipment and the correct use of it needs to be supervised. Besides that, workers should be warned to avoid skin and eye contact, to wash off any skin contamination immediately and to report skin/eye problems that may develop. Taking these measures into account, the intensity of exposure is considered to be very low. Nevertheless, workers should additionally follow the recommended safety measures in the extended Safety Data Sheet (eSDS).

- **Consumer exposure:** There is no intended use of trimethylolpropane tracrylate in consumer products. Therefore, a health hazard due to exposure for the consumer is negligible.

- **Environmental exposure:** Trimethylolpropane triacrylate is readily biodegradable and will therefore be degraded within the wastewater treatment process. Though the
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
Signal word:
Warning

Hazard statements:
H303: May be harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H401: Toxic to aquatic life.

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)

3. BASF Product Finder

4. BASF Homepage
   http://worldaccount.basf.com/wa/NAFTA~en_US/Catalog/Pigments/pi/BASF/range/co_woo_resins_laromer

Most commonly used synonyms

» 2-Propenoic acid, 2-ethyl-2-[[1-oxo-2-propenyl]oxy]methyl]-1,3- propanediyl ester (9CI)
» Acrylic acid, triester with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (8CI)
» 1,3-Propanediol, 2-ethyl-2-(hydroxymethyl)-, triacrylate (8CI)
» NK Ester A-TMPT
» Monocizer TD 1500A
» Viscoat 295
Setalux UV 2241
A-TMPT
Aronix M 309
Kayarad TMPTA
TMPTA
Light Acrylate TMP-A
2-Ethyl-2-(hydroxymethyl)-1,3-propanediol triacrylate
2-Propenoic acid, 2-ethyl-2-[[1-oxo-2-propenyl]oxy]methyl]-1,3-propanediyl ester (9CI)
Acrylic acid, triester with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (8CI)
Ageflex TMPTA
Blemmer ATT
M 309
Ogumont T 200
Saret 351
Sartomer 357
TD 1500A
TMP 3A
SR 351
Sartomer SR 351

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
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