GPS Safety Summary
2-Ethylhexyl Acrylate

Chemical Identity

Name: 2-Ethylhexyl acrylate

CAS number: 103-11-7

Molecular formula: C₁₁H₂₀O₂

Structure

IUPAC name: 2-Ethylhexyl acrylate
BASF brand names: 2-EHA

For synonyms see end of document

Product Uses

Acrylate esters, the family of chemicals to which 2-ethylhexyl acrylate belongs, are used primarily as reactive building blocks to produce polymers and copolymers which are used in coatings and inks, adhesives, sealants, textiles, plastics and elastomers. Specifically, 2-EHA is used in the following applications:

- **Adhesives and caulks:** as a co-monomer in polymers used in construction caulks and sealants, or in the manufacture of pressure-sensitive adhesives.
- **Chemical intermediates:** as a raw material for a variety of chemical products.
- **Coatings:** as a co-monomer in polymers to be used as textile finishes, in water-based paints and coatings, and as coatings for paper and paper products.
- **Leather:** as a co-monomer in polymers to be used as leather finishes.
- **Plastics:** as a raw material for the manufacture of a variety of plastics or plastics additives.
- **Fibers:** as a raw material in the manufacture of fibers of both woven and non-woven textiles.
2-Ethylhexyl acrylate is not sold for direct consumer use, but it is used as a raw material to make a variety of goods used by consumers or construction personnel and could be present in trace amounts as residual monomer in consumer products, including paints.

**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>2-Ethylhexyl acrylate is of low toxicity after a single ingestion and virtually nontoxic after a single skin contact. The inhalation of a highly saturated vapor-air-mixture represents an unlikely acute hazard.</td>
</tr>
<tr>
<td>Irritation / corrosion</td>
<td>May cause skin irritation with local redness and swelling. Liquid may cause eye irritation which is reversible. Vapor or mists are irritating to the respiratory tract.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>Toxicity after repeated exposure</td>
<td>Does not cause toxicity to internal organs after repeated exposure in animal studies. The predominant effect is local irritation.</td>
</tr>
<tr>
<td>Genotoxicity / Mutagenicity</td>
<td>Based on the available test data, not expected to cause genetic effects.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Chronic/oncogenicity studies showed that 2-EHA did not produce evidence of carcinogenicity of known relevance to humans. 2-EHA caused an increase in skin tumors in some, but not all, chronic dermal studies in mice. 2-EHA induced skin tumors at high concentrations that were highly irritating, and this damage was presumed to be the mode of action for tumor formation.</td>
</tr>
<tr>
<td>Toxicity for reproduction</td>
<td>Did not cause birth defects in laboratory</td>
</tr>
</tbody>
</table>
animals. Similar materials did not cause reproductive effects in laboratory animals. In addition, no effects were seen on reproductive organs in long-term animal studies.

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>Very toxic to aquatic organisms</td>
</tr>
<tr>
<td></td>
<td>Toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fate and Behavior</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradation</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>Not expected to bioaccumulate</td>
</tr>
<tr>
<td>PBT / vPvB conclusion</td>
<td>Not considered to be either PBT nor vPvB</td>
</tr>
</tbody>
</table>

Physical/Chemical Properties

Phys/Chem Safety Assessment
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>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Sweet, organic</td>
</tr>
<tr>
<td>Density</td>
<td>0.88 g/cm³ @ 20°C</td>
</tr>
<tr>
<td>Melting / boiling point</td>
<td>-90°C / 215°C @ 1013 hPa</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not flammable</td>
</tr>
<tr>
<td></td>
<td>The substance has no pyrophoric properties and does not liberate flammable gases on contact with water.</td>
</tr>
</tbody>
</table>
Explosive properties | Non explosive
---|---
Self-ignition temperature | 252 °C
Vapor pressure | 0.24 hPa @ 25 °C
Molecular weight | 184.28
Water solubility | 9.6 mg/L @ 25 °C
Flash point | 82°C @ 1013 hPa
Octanol-water partition coefficient (Log Pow) | ca 4 @ 25 °C

**Exposure Potential**

- **Workplace exposure:** Exposure can occur either in a 2-ethylhexyl acrylate manufacturing facility or in the various industrial or manufacturing facilities that use it. It is produced, distributed, stored and consumed in closed systems. Those working with 2-ethylhexyl acrylate in manufacturing operations could be exposed during maintenance, sampling, testing, manual transfer, or other procedures.

- **Consumer exposure:** 2-Ethylhexyl acrylate is not sold for direct consumer use, but it is used as a raw material to make a variety of goods used by consumers or construction personnel and could be present in trace amounts as residual monomer in consumer products, including paints.

- **Environmental exposure:** Potential releases into the environment are limited and for the most part occur only during production and processing, typically via wastewater and exhaust gases. If accidentally released to surface water, it rapidly biodegrades and will not persist in the environment and will not 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**

*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.*

**Industrial Manufacturing and Processing**
In industrial manufacturing and processing applications, it is always important to obtain a current Safety Data Sheet from your supplier, follow the guidance provided, and comply with applicable regulations. Acrylates and products containing them should always be handled in well ventilated areas. Each manufacturing facility should have a thorough training program for employees, appropriate work processes, and safety equipment in place to limit unnecessary exposure. In the event of a spill, the focus is on containing the spill to prevent contamination of soil, ditches, sewers, or surface or ground water. Only trained and properly protected personnel should be involved in clean-up operations.

**Professional Applications**
Before using any chemical product, the user should be properly trained in safe handling procedures for that product. This means that they should always contact the supplier of the product being used to obtain the most current safe handling advice and follow all instructions and warnings.

**Consumer Applications**
It is important to read and follow all warnings and instructions on the product label or packaging.

**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

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Date of Issue: May 2012
Signal word:
Warning

Hazard statements:
H227: Combustible liquid.
H303: May be harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H335: May cause respiratory irritation.
H401 Toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.

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

- 2-Ethylhexylacrylat
- 2-Propenoic acid, 2-ethylhexyl ester
- 2-Ethylhexyl acrylate

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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furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability whatsoever resulting from use of or reliance on the data and information given.

Contact

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