GPS Safety Summary

Octocrilene

Chemical Identity

Name: Octocrilene
CAS number: 6197-30-4
Molecular formula: C₂₄H₂₇NO₂

Structure

![Structure of Octocrilene](image)

IUPAC name: 2-ethylhexyl 2-cyano-3,3-diphenylacrylate

BASF brand names: UVINUL N 539T, Uvinul 3039

For synonyms see end of document

Product Uses

Octocrilene is used as an oil-miscible UVB filter that is approved worldwide for the use in suncare preparations to protect the skin against the harmful effects of UV radiation. It is recommended to combine Octocrilene with other oil soluble UV filters to obtain high Sun Protection Factor (SPF) values.

The same substance also finds use as a UV absorber to protect plastics and coatings from degradation caused by UV radiation.

Benefits

A further feature of Octocrilene is its excellent photostability, and its ability to stabilise photoinstable UV filters such as Butyl Methoxydibenzoylmethane.

Since the substance is a liquid, its use in plastics and coatings is recommended when processing requires liquid dosing, e.g. flexible PVC, unsaturated polyesters, acrylics, and paint formulations.
Health Information

Human Health Safety Assessment

Note: The information in the human health assessment chapter may be useful to the general population, whose contact to chemicals would likely be limited only to certain end-use applications, and in concentrations far below the concentrated substance.

- Octocrilene is virtually nontoxic if swallowed or after a single contact with the skin. Experimental data show that if in contact with eyes and skin, Octocrilene will not cause irritation. There are no indications that exposure will lead to allergenic reactions after skin contact. In animals, repeated oral exposure with very high doses has been reported to adversely affect the liver. These adverse effects occur at such high doses that the substance is not to be classified for toxicity after repeated exposure. Overall, long-term studies and the studies for genetic and reproductive concerns, indicate that Octocrilene does not pose a genotoxic or carcinogenic threat, or cause reproductive or developmental effects.

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><strong>Acute Toxicity</strong></td>
<td>Virtually nontoxic after a single ingestion or skin contact.</td>
</tr>
<tr>
<td><strong>Irritation</strong></td>
<td>Not irritating to the skin and eyes.</td>
</tr>
<tr>
<td><strong>Sensitisation</strong></td>
<td>Skin sensitising effects were not observed in animal studies.</td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td>Not mutagenic in bacteria, mammalian cell culture and mammals.</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>Based on current knowledge not considered to be carcinogenic.</td>
</tr>
<tr>
<td><strong>Toxicity after repeated exposure</strong></td>
<td>May cause damage to the liver after repeated ingestion of high doses, as shown in animal studies. Not to be classified for toxicity after repeated exposure.</td>
</tr>
<tr>
<td><strong>Toxicity for reproduction</strong></td>
<td>No indications of a developmental toxic/teratogenic effect were seen and no effects have been reported in</td>
</tr>
</tbody>
</table>
reproductive organs in long term animal studies.

Environmental Information

Environment Safety Assessment

- Octocrilene does not react with water and will not evaporate into air from the water surface. However, in the air Octocrilene is rapidly degraded due to indirect photochemical processes. Adsorption to soil is expected. Octocrilene is poorly soluble in water, and no toxic effects on the aquatic organisms tested were observed within the range of solubility. The substance may, however, accumulate in organisms. Octocrilene is not easily degraded by microorganisms. Due to its properties such as low water solubility, its bioaccumulation potential and its lack of ready biodegradability, Octocrilene may cause long lasting harmful effects to aquatic life.

Note: The information in this chapter is intended to provide a brief and general assessment 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 not acutely harmful to aquatic organisms.</td>
</tr>
<tr>
<td></td>
<td>No toxic effects within the range of solubility.</td>
</tr>
<tr>
<td></td>
<td>May cause long lasting harmful effects to aquatic life.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Poorly biodegradable.</td>
</tr>
<tr>
<td>Bioaccumulation potential</td>
<td>May be accumulated in organisms.</td>
</tr>
</tbody>
</table>

Physical/Chemical Properties

Phys/Chem Safety Assessment

- The pure substance is a viscous clear yellow liquid at room temperature. Octocrilene is insoluble in water. The substance 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.
### Property Value

<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>- 10° C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flash point</td>
<td>234 °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>401 °C</td>
</tr>
</tbody>
</table>

## Exposure Potential

- **Workplace exposure:** Based on the very low toxicity of Octocrilene an exposure assessment is not considered necessary. Octocrilene 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. Nevertheless, workers should follow the recommended safety measures in the Extended Safety Data Sheet (eSDS).

- **Consumer exposure:** Octocrilene released during handling is of no concern for the health of consumers since consumers will not come into contact with harmful levels of Octocrilene. Due to its low toxicity, Octocrilene has been regulatorily approved as UV filter in cosmetics. Nevertheless consumers should always read product information before use and follow the label/use instructions.

- **Environmental exposure:** Industrial uses of Octocrilene include manufacturing and formulation steps. The end products used by the consumer are cosmetics and plastics. The toxicity of Octocrilene towards aquatic organisms is very low, and based on the exposure estimation all identified uses are assumed to be adequately controlled. 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**

UN GHS is the basis for country specific GHS labeling

**Signal word:** No signal word

**Hazard statements:**

H413: May cause long lasting harmful effects to aquatic life.

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

Most commonly used synonyms

» 2-Propenoic acid, 2-cyano-3,3-diphenyl-, 2-ethylhexyl ester
» Octocrilene

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

Glossary

Acute toxicity = harmful effects after a single exposure
Bioaccumulation = accumulation of substance in an organism
Biodegradation = chemical breakdown of substances by microorganisms
Carcinogenicity = effects causing cancer
Chronic toxicity = harmful effects after repeated exposures
Clastogen = a substance that causes breaks in chromosomes
Embryotoxicity = harmful effects on foetal health
Explosive properties = refer to the UN GHS hazard class “Explosives”: An explosive substance or mixture is a solid or liquid substance or mixture of substances which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.
GHS = Global Harmonized System
Hazard = situation bearing a threat to health and environment
M(SDS) = Material Safety Data Sheet
Mutagenicity = effects that change genes
Concentrated = Non-formulated undiluted substance
Reprotoxicity = combining teratogenicity, embryotoxicity and harmful effects on fertility
Sensitising = allergenic
Teratogenic = effects on foetal morphology