

GPS Safety Summary

2-Ethylhexyl methacrylate (EHMA)

The Product Safety Summary is intended to provide a general overview of the chemical substance in the context of ICCA Global Product Strategy. The information on the summary is basic information and is not intended to provide emergency response, medical or treatment information.

Substance name

2-Ethylhexyl methacrylate (EHMA)
CAS-No. 688-84-6

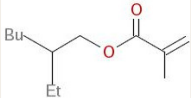
General statement

EHMA is produced for the use as a building block to make a wide range of polymer based products. Consumer risk and exposure is not of concern as this substance is manufactured and handled in industrial settings.

The environmental effects, ecotoxicology and toxicology information available for this chemical is provided based on studies and/or a reliable evaluation of its hazardous properties.

This chemical should not enter surface water, groundwater and soil. General and substance specific operational conditions and risk management measures are in place to prevent exposure to workers and release to the environment.

Chemical identity

Name	2-Ethylhexyl methacrylate (EHMA)
Brand names	VISIOMER® EHMA
Chemical name (IUPAC)	2-Ethylhexyl methacrylate
CAS number	688-84-6
Molecular formula	C ₁₂ H ₂₂ O ₂
Structure	
Synonyms	2-Propenoic acid, 2-methyl-, 2-ethylhexyl ester

Uses and application

EHMA is produced for the use as monomer for production of polymers. The substance is manufactured in industrial settings in closed systems and used by industry for manufacture of polymers in closed and semi-closed systems. Downstream use of EHMA is almost exclusively in the form of polymer.

EHMA is produced for the use as a building block to make a wide range of polymer based products that we see and use every day from paints and coatings, toners and inks, oil additives to dental and medical products to name but a few. EHMA is of low concern to human health and the environment. It is classified as hazardous (skin irritant and sensitizing) but has been handled safely by industry and professionals for over 60 years. EHMA-based polymers are inert in the environment.

Physical/chemical properties

Property	Value
Physical state	Liquid
Color	Colorless
Odor	Ester-like
Melting / Boiling point	< -50 °C / 227.6 °C (1013 hPa)
Density	0.88 g/cm ³ (20 °C)
Molecular weight	198.3 g/mol
Water solubility	3.1 mg/l (20°C)
Vapor pressure	0.065 hPa (20 °C)
Ignition temperature	250 °C
Flashpoint	97 °C (closed cup)
Octanol-water partition coefficient	log Pow: 4.95 (OECD 107)
Viscosity	2.12 mm ² /s (20 °C)

Health effects

Effect Assessment	Result
Acute toxicity (oral, dermal and inhalation)	Low toxicity after oral, dermal and inhalation exposure.
Eye / Skin irritation	Causes irritation to the skin and respiratory system. Not irritating to the eyes.
Sensitization	Sensitizing by skin contact. Does not cause asthma.
Toxicity after repeated exposure	Toxicity is low and non-specific.
Genotoxicity / Mutagenicity	Not genotoxic / mutagenic.
Carcinogenicity	No evidence of carcinogenicity.
Toxicity for reproduction	Does not selectively harm reproduction or cause birth defects.

Environmental effects

Effect Assessment	Result
Aquatic toxicity (acute/ short-term)	Toxic to aquatic life.
Aquatic toxicity (chronic/ long-term)	Harmful to aquatic life with long lasting effects.
Fate and Behavior	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Bioaccumulation is not expected.
PBT / vPvB conclusion	Neither considered to be Persistent, Bioaccumulative and Toxic (PBT) nor very Persistent and very Bioaccumulative (vPvB).

Exposure

Human health

EHMA is produced in essentially closed systems so significant worker exposure during manufacture is unlikely. Workers will come into contact with EHMA during polymer production and professional use of products containing liquid monomer.

Consumer uses of EHMA are generally limited to polymer applications. Consumer exposure is therefore most likely only to the extremely low levels of residual monomer in polymers used in consumer products (EHMA is used as monomer in polymerization). Consumer exposure to liquid monomer could occur from use of one of the few professional/DIY or hobbyist products that contain significant levels of liquid monomer (see risk management recommendations, below). Use of EHMA in artificial nail products and other non-medical/dental applications involving direct skin/nail contact with the liquid monomer is not recommended.

Environment

Direct use by consumers is limited to small amounts for professional/DIY or hobbyist products that contain significant levels of liquid monomer. The manufacture is a closed and automated process and no exposure to the environment is intended. Any exposures will generally be lower than concern levels. Any waste containing residual EHMA has to be disposed in accordance with local, state and federal laws.

Risk management recommendations

Industry use, production and formulation

Workers will come into contact with EHMA during polymer production and professional use of products containing liquid monomer. Workers should follow the recommended safety measures as provided by the manufacturer in the Safety Data Sheet. Considering the skin irritating and sensitizing properties this typically will include avoiding skin contact or the wearing of suitable protective gloves and avoiding inhalation of high concentrations of vapor by use of one or more of the following: engineering controls, good general ventilation or personal protective (respiratory) equipment, depending upon the particular use conditions. Releases to air and water during manufacturing processes and use would rapidly disappear by biodegradation.

Consumer use

Consumer use of products containing EHMA-based polymers does not require any risk management measures relating to the EHMA residues in those polymers. Use of professional/DIY and hobbyist products that contain liquid EHMA monomer will require the user to follow the guidance provided by the product manufacturer on the packaging or product label. Uncured (unpolymerized) product should not be poured down the drains or discarded in domestic waste. Use of EHMA in artificial nail products and other non-medical/dental applications involving direct skin/nail contact with the liquid monomer is not recommended.

State agency review

- UN-GHS Ver. 4 (2011)


Regulatory information/classification and labelling

GHS-Classification

Statutory basis UN-GHS Ver. 4 (2011)	2-Ethylhexyl methacrylate
Skin corrosion/irritation	Hazard category 3*
Skin sensitizer	Hazard category 1B
Hazardous to the aquatic environment - Acute Hazard	Hazard category 2*
Hazardous to the aquatic environment - Chronic Hazard	Hazard category 3

* No worldwide use of this category. Not used in the European Union.

GHS-Labeling

Statutory basis UN-GHS Ver. 4 (2011)	2-Ethylhexyl methacrylate
Symbol(s)	
Signal word	Warning
Hazard statement	H316 – Causes mild skin irritation. H317 – May cause an allergic skin reaction. H401 – Toxic to aquatic life. H412 – Harmful to aquatic life with long lasting effects.
Precautionary statements:	Precautionary statements and more information about 2-Ethylhexyl methacrylate can be found on the Safety Data Sheet.
Prevention	Keep away from flames and hot surfaces. – No smoking. Wear protective gloves and eye/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace.
Response	In case of fire: Use foam, dry chemical, carbon dioxide to extinguish. If on skin: wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Storage	Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local regulation.

Glossary

Acute toxicity	harmful effects after a single exposure
Biodegradable	breakdown of materials by a physiological environment
Bioaccumulation	accumulation of substances in the environment
Carcinogenicity	effects causing cancer
Chronic toxicity	harmful effects after repeated exposures
GHS	Global Harmonized System on Classification and Labeling
Mutagenicity	effects that change genes
PBT	Persistent Bioaccumulative Toxic
Reprotoxicity	teratogenicity, embryotoxicity and harmful effects on fertility
Sensitizing	allergenic
Teratogenic	effects on foetal morphology
vPvB	very Persistent very Bioaccumulative

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For more product safety summaries, please visit:

[Methacrylates Producers Association](#)

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