

# SAFETY DATA SHEETS

According to the UN GHS revision 8

Version: 1.0

Creation Date: July 15, 2019

Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

**Product name** Glycidyl methacrylate

### 1.2 Other means of identification

**Other names**

### 1.3 Recommended use of the chemical and restrictions on use

**Identified uses** CBI, Intermediates

**Uses advised against** no data available

### 1.4 Supplier's details

**Company** Target Molecule Corp.

**Address** Suite 260, 36 Washington Street, Wellesley Hills, Massachusetts, USA

**Tel/Fax** +1 (857) 239-0968

### 1.5 Emergency phone number

**Emergency phone number** 400-821-2233

**Service hours** Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 4, Oral

Acute toxicity - Category 3, Dermal

Skin corrosion, Sub-category 1C

Serious eye damage, Category 1

Skin sensitization, Category 1

Specific target organ toxicity – single exposure, Category 3

Germ cell mutagenicity, Category 2

Carcinogenicity, Category 1B

Specific target organ toxicity – repeated exposure, Category 1

Reproductive toxicity, Category 1B

### 2.2 GHS label elements, including precautionary statements

**Pictogram(s)**



**Signal word** Danger

**Hazard statement(s)**  
H302 Harmful if swallowed  
H311 Toxic in contact with skin  
H314 Causes severe skin burns and eye damage  
H317 May cause an allergic skin reaction

H335 May cause respiratory irritation  
H341 Suspected of causing genetic defects  
H350 May cause cancer  
H372 Causes damage to organs through prolonged or repeated exposure

**Precautionary statement(s)**

**Prevention**

P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P271 Use only outdoors or in a well-ventilated area.  
P203 Obtain, read and follow all safety instructions before use.

**Response**

P301+P317 IF SWALLOWED: Get medical help.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of water/...  
P316 Get emergency medical help immediately.  
P321 Specific treatment (see ... on this label).  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P363 Wash contaminated clothing before reuse.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P317 Get medical help.  
P333+P317 If skin irritation or rash occurs: Get medical help.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P319 Get medical help if you feel unwell.  
P318 IF exposed or concerned, get medical advice.

**Storage**

P405 Store locked up.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

**Disposal**

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**2.3 Other hazards which do not result in classification**

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2,3-epoxypropyl methacrylate	2,3-epoxypropyl methacrylate	106-91-2	203-441-9	100%

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Fresh air, rest. Half-upright position. Refer for medical attention.

#### Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

#### Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

#### Following ingestion

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

### 4.2 Most important symptoms/effects, acute and delayed

The liquid irritates eyes about as much as soap. Prolonged contact with skin produces irritation and dermatitis. (USCG, 1999)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Esters and related compounds

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Fires involving this chemical can be controlled using a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

### 5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating vapors are generated when heated (USCG, 1999)

### 5.3 Special protective actions for fire-fighters

Use dry powder, carbon dioxide, foam. In case of fire: keep drums, etc., cool by spraying with water.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in covered containers as far as possible. Do NOT let this chemical enter the environment.

### 6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Collect leaking and spilled liquid in covered containers as far as possible. Do NOT let this chemical enter the environment.

### 6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

NO open flames. Above 61°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### 7.2 Conditions for safe storage, including any incompatibilities

Store only if stabilized. Cool. Well closed. Keep in the dark. Separated from strong oxidants, strong bases and strong acids. Separated from food and feedstuffs. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing. Temp during storage must be kept low to minimize formation of peroxides and other oxidation products. ... Storage temp below 30 deg C are recommended for the polyfunctional methacrylates. ... The methacrylate monomers should not be stored for longer than one year. Shorter storage times are recommended for the aminomethacrylates, ie, three months, and the polyfunctional methacrylates, ie, six months. Many of these compd are sensitive to UV light and should, therefore, be stored in the dark. The methacrylic esters may be stored in mild steel, stainless steel, or aluminum. Methacrylic acid & derivatives  
Recommended storage temperature: Store at -20°C

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure limit values

MAK sensitization of skin (SH)

#### Biological limit values

no data available

### 8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

#### Skin protection

Protective gloves. Protective clothing.

#### Respiratory protection

Use ventilation, local exhaust or breathing protection.

#### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	Liquid.
<b>Colour</b>	Clear and colourless.
<b>Odour</b>	Fruity odor
<b>Melting point/freezing point</b>	Ca. -41.5 °C. Atm. press.:Ca. 1 atm.
<b>Boiling point or initial boiling point and boiling range</b>	Ca. 189 °C. Atm. press.:Ca. 1 atm.
<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	Ca. 84 °C. Atm. press.:Ca. 1 atm.
<b>Auto-ignition temperature</b>	Ca. 389 °C. Atm. press.:Ca. 1 atm.
<b>Decomposition temperature</b>	no data available

<b>pH</b>	no data available
<b>Kinematic viscosity</b>	cP = Ca. 5.481. Temperature:70.0°F.
<b>Solubility</b>	5 to 10 mg/mL at 68° F (NTP, 1992)
<b>Partition coefficient n-octanol/water</b>	log Pow = Ca. 0.96. Temperature:25 °C.
<b>Vapour pressure</b>	Ca. 4.2 hPa. Temperature:Ca. 25 °C.
<b>Density and/or relative density</b>	Ca. 1.07 kg/m <sup>3</sup> . Temperature:25 °C.
<b>Relative vapour density</b>	(air = 1): 4.9
<b>Particle characteristics</b>	no data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

The substance may polymerize due to heating and under the influence of light, peroxides and bases. Reacts violently with strong acids, strong bases and strong oxidants. This generates fire hazard.

### 10.2 Chemical stability

no data available

### 10.3 Possibility of hazardous reactions

Epoxides, such as GLYCIDYL METHACRYLATE, are highly reactive. They polymerize in the presence of catalysts or when heated. These polymerization reactions can be violent. Compounds in this group react with acids, bases, and oxidizing and reducing agents. They react, possibly violently with water in the presence of acid and other catalysts.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

no data available

### 10.6 Hazardous decomposition products

When heated to decomp it emits acrid smoke and fumes.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 - rat - 597 mg/kg bw.
- Inhalation: LC0 - rat (male/female) - > 412 ppm.
- Dermal: LD50 - rabbit - 480 mg/kg bw.

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

The substance is severely irritating to the eyes, skin and respiratory tract.

#### **STOT-repeated exposure**

Repeated or prolonged contact may cause skin sensitization.

#### **Aspiration hazard**

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

- Toxicity to fish: LC50 - *Oryzias latipes* - 2.8 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 24.9 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 14.6 mg/L - 72 h.
- Toxicity to microorganisms: no data available

### **12.2 Persistence and degradability**

Glycidyl methacrylate, present at 100 mg/l, reached 93-94% of its theoretical BOD in 4 weeks using an activated sludge inoculum and the Japanese MITI test(1).

### **12.3 Bioaccumulative potential**

An estimated BCF of 3 was calculated for glycidyl methacrylate(SRC), using an estimated log Kow of 0.81(1,SRC) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

### **12.4 Mobility in soil**

Using a structure estimation method based on molecular connectivity indices(1), the Koc for glycidyl methacrylate can be estimated to be about 10(SRC). According to a classification scheme(2), this estimated Koc value suggests that glycidyl methacrylate is expected to have very high mobility in soil.

### **12.5 Other adverse effects**

no data available

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## **SECTION 13: Disposal considerations**

### **13.1 Disposal methods**

#### **Product**

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### **Contaminated packaging**

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14: Transport information**

### **14.1 UN Number**

ADR/RID: UN2922 (For reference only, please check.)

IMDG: UN2922 (For reference only, please check.)

IATA: UN2922 (For reference only, please check.)

### **14.2 UN Proper Shipping Name**

ADR/RID: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.)

IMDG: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.)

IATA: CORROSIVE LIQUID, TOXIC, N.O.S. (For reference only, please check.)

### **14.3 Transport hazard class(es)**

ADR/RID: 8 (For reference only, please check.)

IMDG: 8 (For reference only, please check.)

IATA: 8 (For reference only, please check.)

#### 14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)

IMDG: I (For reference only, please check.)

IATA: I (For reference only, please check.)

#### 14.5 Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

#### 14.6 Special precautions for user

no data available

#### 14.7 Transport in bulk according to IMO instruments

no data available

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### SECTION 15: Regulatory information

#### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
2,3-epoxypropyl methacrylate	2,3-epoxypropyl methacrylate	106-91-2	203-441-9
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

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### SECTION 16: Other information

#### Information on revision

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#### Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

#### References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

#### **Other Information**

An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert.

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*Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.*