



THE EDGE OF INNOVATION

GHS COMPLIANT SAFETY DATA SHEET

TO COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR.1910.1200
& THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

SECTION 1: IDENTIFICATION

PRODUCT NAME Glycidyl Methacrylate
MFR.'S CODE ID/SYNONYMS Glycidyl Methacrylate
2,3-Epoxypropyl methacrylate
CAS NUMBER 106-91-2
PRODUCT USE Acrylate Ester Monomer
RESTRICTIONS ON USE None
MANUFACTURER/SUPPLIER Estron Chemical, Inc.
ADDRESS 807 North Main Street, Calvert City, KY 42029 USA
GENERAL INFORMATION (270) 395-4195
EMERGENCY TELEPHONE CHEMTREC (800) 424-9300





SECTION 2: HAZARDS IDENTIFICATION

Signal Word: *Danger*

GHS Classification

Physical	Health	Environmental
Flammable Liquids – Category 4	Acute Toxicity (Oral) – Category 4 Acute Toxicity (Dermal) – Category 3 Acute Toxicity (Inhalation) – Category 4 Skin Corrosion – Category 1A Eye Damage – Category 1 Skin Sensitization – Category 1 Germ Cell Mutagenicity – Category 2 Carcinogenicity – Category 1B Reproductive Toxicity – Category 1B Specific Target Organ Toxicity - Single Exposure (Inhalation, Respiratory Tract) – Category 1	Acute Aquatic Toxicity – Category 2

GHS Label

<p>Symbols: Skull and Crossbones  Health Hazard  Corrosion  Exclamation Mark </p>	
<p>Hazard Statements H227: Combustible liquid 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 H318: Causes serious eye damage H332: Harmful if inhaled H341: Suspected of causing genetic defects H350: May cause cancer H360: May damage fertility or the unborn child H370: Causes damage to organs (Respiratory Tract) H401: Toxic to aquatic life</p>	<p>Precautionary Statements <i>Prevention</i> P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking. P260: Do not breathe dust/fume/gas/mist/vapours/spray. P264: Wash exposed skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P272: Contaminated work clothing must not be allowed out of the workplace. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. <i>Response</i> P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P302+352: IF ON SKIN: Wash with plenty of soap and water. P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P308+311: IF exposed or concerned: Call a POISON CENTER or doctor/physician. P310: Immediately call a POISON CENTER or doctor/physician. P321: Specific treatment (see supplemental first aid instructions on this label) P330: Rinse mouth. P333+313: If skin irritation or a rash occurs: Get medical advice/attention. P361+P364: Take off immediately all contaminated clothing and wash it before reuse. P363: Wash contaminated clothing before reuse. P370+378: In case of fire: Use dry chemicals, Alcohol Resistant Foam, CO₂ or water fog to extinguish. <i>Storage</i> P403+235: Store in a well ventilated place. Keep cool. P405: Store locked up. <i>Disposal</i> P501: Dispose of contents/container to an authorized hazardous waste handler.</p>

HAZARDS NOT OTHERWISE CLASSIFIED: None identified.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

INGREDIENTS	CAS #	%	CLASSIFICATION
Glycidyl Methacrylate	106-91-2	> 97.5	Flammable Liquids – Category 4 Acute Toxicity (Oral) – Category 4 Acute Toxicity (Dermal) – Category 3 Acute Toxicity (Inhalation) – Category 4 Skin Corrosion – Category 1A Eye Damage – Category 1 Skin Sensitization – Category 1 Germ Cell Mutagenicity – Category 2 Reproductive Toxicity – Category 1B Specific Target Organ Toxicity - Single Exposure (Inhalation, Respiratory Tract) – Category 1
Glycidol	556-52-5	< 1.5	Flammable Liquids – Category 4 Acute Toxicity (Oral) – Category 4 Acute Toxicity (Dermal) – Category 4 Acute Toxicity (Inhalation) – Category 3 Skin Irritation – Category 2 Eye Damage – Category 1 Germ Cell Mutagenicity – Category 2 Carcinogenicity – Category 1B Reproductive Toxicity – Category 1B Specific Target Organ Toxicity - Single Exposure (Inhalation, Respiratory System) – Category 3
Epichlorohydrin	106-89-8	< 0.3	Flammable Liquids – Category 4 Acute Toxicity (Oral) – Category 4 Acute Toxicity (Dermal) – Category 3 Acute Toxicity (Inhalation) – Category 4 Skin Corrosion – Category 1A Eye Damage – Category 1 Skin Sensitization – Category 1 Carcinogenicity – Category 1B Reproductive Toxicity – Category 1B Acute Aquatic Toxicity – Category 2

(See Section 8 for Exposure Limits)

SECTION 4: FIRST-AID MEASURES

SYMPTOMS OF EXPOSURE

ACUTE	Skin, eye or respiratory tract burning or irritation. Difficulty breathing. Nausea or vomiting.
DELAYED	Stinging, tearing, redness and swelling of the eyes. Rash, redness, itching or burning of the skin. Shortness of breath. Painful or labored breathing.
INHALATION	Harmful if inhaled. Causes damage to the respiratory tract. Remove victim to fresh air and keep at rest in a position comfortable for breathing.
SKIN CONTACT	Toxic in contact with skin. Causes severe skin burns and may cause an allergic skin reaction. Wash thoroughly with plenty of soap and water. If skin irritation or a rash occurs, consult a doctor.
EYE CONTACT	Causes serious eye damage. Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritation persists get medical advice/attention.
INGESTION	Harmful if swallowed. If ingested, rinse mouth (if conscious) and seek medical attention. Do NOT induce vomiting.
SPECIFIC TREATMENT	No other specific treatments are known or have been identified.

SECTION 5: FIRE FIGHTING MEASURES

FLAMMABILITY CLASSIFICATION	Combustible liquid, Class IIIA
FLAMMABLE LIMITS	LEL: 1.1% by volume of solvent UEL: No test data available
HAZARDOUS COMBUSTION PRODUCTS	Carbon monoxide and carbon dioxide.
EXTINGUISHING MEDIA	Dry Chemical, Alcohol Resistant Foam, Water Fog, and CO ₂
UNUSUAL FIRE AND EXPLOSION HAZARDS	Container may rupture from gas generation in a fire situation. Elevated temperatures can initiate an exothermic polymerization with explosive effects. Vapors can accumulate in low areas and form explosive concentrations.
SPECIAL FIRE FIGHTING PROCEDURES	Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream as this may spread the fire. Move containers from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Water fog, applied gently may be used as a blanket for fire extinguishment.
SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS	As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full (Bunker) protective gear. Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Prevent contact with skin, eyes and clothing. Ensure adequate ventilation. Isolate the area and eliminate all ignition sources. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. Vapors can accumulate in low areas and form explosive concentrations.
PROTECTIVE EQUIPMENT	See Personal Protective Equipment in Section 8.
EMERGENCY PROCEDURES	Avoid unnecessary exposure to bystanders, prevent contact with open flames or other ignition sources.
ENVIRONMENTAL PRECAUTIONS	Obey relevant local, state, provincial and federal laws and regulations. Stop the spill at the source. Do not allow the product to enter public drainage systems or open water courses.
METHODS AND MATERIALS FOR CLEANING UP	Contain spillage. Dike area to contain the spill. Absorb with materials such as: sand, polyethylene fiber products, polypropylene fiber products. Do NOT use absorbent materials such as: cellulose, clay, sawdust, Milsorb®, DRIERITE or ABSORB-N-DRI. Remove with shovel. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	DO NOT INGEST OR INHALE. Prevent contact with the eyes, skin and clothing. Wash thoroughly after handling. Use with adequate ventilation. Ground and bond all containers and handling equipment. Handle in accordance with good industrial hygiene and safety practice. Take precautionary measures against static discharges. Emptied containers may still be hazardous. Do not cut, drill, grind, weld or perform similar actions on or near empty containers.
CONDITIONS FOR SAFE STORAGE	Store below 77 °F or 25 °C. Store locked up in cool, dry, well-ventilated areas. Keep containers closed. Do not store near extreme heat, open flame or sources of ignition. Best if used within 3 months from date of purchase when all storage and handling guidelines are maintained.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENTS	CAS #	%	ACGIH TLV	OSHA PEL
Glycidyl Methacrylate	106-91-2	> 97.5	<i>None established</i>	<i>None established</i>
Glycidol	556-52-5	< 1.5	2 ppm	50 ppm
Epichlorohydrin	106-89-8	< 0.3	0.5 ppm	5 ppm

USA Workplace Environmental Exposure Levels (WEEL) for Glycidyl Methacrylate are 0.5 ppm (TWA) for Dermal Sensitization.

APPROPRIATE ENGINEERING CONTROLS Showers, eyewash stations and ventilation systems.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE	Safety goggles or face shield.
SKIN	Impervious protective gloves and clothing as appropriate to prevent skin contact for the exposure activity. Examples of preferred glove barrier materials include: chlorinated polyethylene, polyethylene, ethyl vinyl alcohol laminate ("EVAL"), polyvinyl alcohol ("PVA") and styrene/butadiene rubber. Examples of acceptable glove barrier materials include: butyl rubber, natural rubber ("latex"), nitrile/butadiene rubber ("nitrile" or "NBR"), polyvinyl chloride ("PVC" or "vinyl") and Viton. Avoid gloves made of Neoprene.
RESPIRATORY	NIOSH Approved Vapor Respirator with a Multi Gas Organic Vapor Cartridge. In situations where exposure concentrations are unknown, SCBA's or supplied air should be utilized.
HYGIENE MEASURES	Handle in accordance with good industrial hygiene and safety practices. When using, do not eat, drink or smoke. Wash face, hands and any other exposed skin areas before breaks and at the end of work. Wash contaminated clothing before re-use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear liquid	ODOR	Sharp
ODOR THRESHOLD	No test data available	pH	No test data available
MELTING POINT	-41.5 °C (-42.7 °F)	BOILING POINT/RANGE	189 °C (372 °F)
FLASH POINT	76 °C (169 °F), closed cup	EVAPORATION RATE	No test data available
FLAMMABILITY	Combustible liquid, Class IIIA		
FLAMMABLE LIMITS	LOWER 1.1 % (V)	UPPER	No test data available
VAPOR PRESSURE	0.33 mmHg @ 25 °C	VAPOR DENSITY	4.9 (Air = 1)
RELATIVE DENSITY	1.042g/ml @ 25 °C	SOLUBILITY IN H ₂ O	50 g/l @ 25 °C
PARTITION COEFFICIENT (n-octanol/water)	Log P _{ow} 096 @ 25 °C	AUTOIGNITION	
DECOMPOSITION		TEMPERATURE	389 °C @ 1,013 hPa
TEMPERATURE	No test data available	VISCOSITY	2.53 mPa.s @ 20 °C

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY	This product does not pose a significant reactivity hazard when stored appropriately (see Section 7).
STABILITY	Stable when maintained under recommended storage conditions and kept free from impurities.
CONDITIONS TO AVOID	Sources of heat, elevated temperatures, ultraviolet radiation, inert gas blankets, direct sunlight, strong oxidizing agents, free radical initiators and contamination by an acidic or basic environment.
INCOMPATIBLE PRODUCTS	Strong oxidizing agents, acids, bases, amines, peroxides, sunlight & impurities.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon dioxide, carbon monoxide.
POSSIBILITY OF HAZARDOUS REACTIONS	Elevated temperatures can cause hazardous polymerization. Maintain inhibitor and dissolved oxygen level. Do not purge containers of this material with inert gas such as nitrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE

ACUTE	Skin, eye or respiratory tract burning or irritation. Difficulty breathing. Nausea or vomiting. Dizziness and drowsiness.
DELAYED	Stinging, tearing, redness and swelling of the eyes. Rash, redness, itching or burning of the skin. Shortness of breath. Painful or labored breathing. Severe irritation of the upper respiratory tract (nose and throat).

ACUTE TOXICITY

INHALATION	Harmful if inhaled. Prolonged excessive exposure may cause adverse effects. May cause dizziness and drowsiness. Vapor may cause severe irritation of the upper respiratory tract (nose and throat).
SKIN	Toxic in contact with skin. Causes severe skin burns. May cause an allergic skin reaction. Prolonged or widespread skin contact may result in absorption of harmful amounts.
EYES	Causes serious eye damage. May cause severe corneal injury. Effects may be slow to heal. Vapor may cause corneal injury.
INGESTION	Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat.
INHALATION TOXICITY	LC ₅₀ Rat > 2.4 mg/l, 4 h
DERMAL TOXICITY	LD ₅₀ Rabbit 480 mg/kg
SKIN IRRITATION	Draize, Rabbit, 24 hours Corrosive
EYE IRRITATION	Draize, Rabbit, 7 days Risk of serious damage to the eyes.
ORAL TOXICITY	LD ₅₀ Rat 597 mg/kg
SENSITIZATION	Skin contact may cause an allergic skin reaction

CHRONIC EFFECTS

CARCINOGENICITY	Possible human carcinogen, has caused cancer in laboratory animals. No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.
MUTAGENIC EFFECTS	In vitro genetic toxicity studies were positive. Animal genetic toxicity studies were negative in some cases and positive in other cases.
REPRODUCTIVE TOXICITY	May damage fertility. In animal studies, has been shown to interfere with fertility. Presumed reproductive toxicant.
TARGET ORGAN EFFECTS	In animals, effects have been reported on the following organs after inhalation: Nasal tissue. This product is classified as specific target organ toxicant, single exposure, category 1 – Respiratory Tract.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY	Known to be toxic to aquatic life.		
TOXICITY TO FISH	ACUTE	LC ₅₀ Oryzias latipes, 96 h	2.8 mg/l
	CHRONIC	Oryzias latipes, 14 d	1.2 mg/l
TOXICITY TO DAPHNIA	ACUTE	EC ₅₀ Daphnia magna, 48 h	24.9 mg/l
	CHRONIC	Daphnia magna, 21 d	1.02 mg/l
TOXICITY TO ALGAE	EC ₅₀ Pseudokirchneriella subcapitata, 72 h		14.6 mg/l

PERSISTENCE AND DEGRADABILITY	Readily biodegradable. Aerobic Biochemical oxygen demand, exposure time 28 d – result 94%.
BIOACCUMULATIVE POTENTIAL	Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
MOBILITY IN SOIL	Potential for mobility in soil is very high (Koc between 0 and 50).
OTHER ADVERSE EFFECTS	This substance is not in Annex I of Regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL Dispose of in accordance with local, state and federal regulations. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Contact a licensed professional waste disposal service to dispose of this material.

US EPA WASTE NUMBER & DESCRIPTION No information available

SECTION 14: TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

U.S. DOT

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S., (Glycidyl Methacrylate)
 Classification: 8, 6.1
 UN#: 2922
 Packing Group: III
 Hazard Label: Poison, Corrosive, Marine pollutant

ICAO / IATA

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S., (Glycidyl Methacrylate)
 Classification: 8, 6.1
 UN#: 2922
 Packing Group: III
 Hazard Label: Poison, Corrosive, Marine pollutant

IMDG

Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S., (Glycidyl Methacrylate)
 Classification: 8, 6.1
 UN#: 2922
 Packing Group: III
 EmS#: F-A, S-B
 Hazard Label: Poison, Corrosive, Marine pollutant

ADR/RID

Proper Shipping Name: Corrosive Liquid, Toxic, N.O.S., (Glycidyl Methacrylate)
 Classification: 8, 6.1
 UN#: 2922
 Packing Group: III
 Hazard Label: Poison, Corrosive, Marine pollutant

OTHER REQUIREMENTS:

Handle as polymerization monomer.

SECTION 15: REGULATORY INFORMATION

The components in this product are either listed or exempt from listing due to polymer exemption criteria for the following chemical listing inventories as indicated by an "X":

AICS	Australian Inventory of Chemical Substances	X
DSL	Canadian Domestic Substances List	X
ECL	Korean Existing Chemicals List	X
ECN	Taiwan Chemical Substances List	X
ELINCS	European List of Notified Chemical Substances	
ENCS	Japanese Existing and New Chemical Substances	X
IECSC	Inventory of Existing Chemical Substances in China	X
ISRAEL	Proposed Israel Hazardous Substances List	
NDSL	Canadian Non-Domestic Substances List	
NZIoC	New Zealand Inventory of Chemicals	X
PICCS	Philippines Inventory of Chemicals and Chemical Substances	X
SWISS	Giftlist 1 and Inventory of Notified New Substances	X
TSCA	US Toxic Substances Control Act	X

INTERNATIONAL REGULATIONS

EU REGULATION (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization, *Substances of Very High Concern*: This product does not contain any SVHC listed substances.

EINECS All of the components of this product are included on the European Inventory of Existing Commercial Chemical Substances.

FEDERAL REGULATIONS

SARA 313 This product does not contain any chemicals which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA Section 311/312 (40 CFR 370) Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Pressure Hazard	No
Reactivity Hazard	No

CLEAN AIR ACT This product does not contain any substances regulated as hazardous air pollutants (HAPS under Section 112 of the Clean Air Act Amendments of 1990.

U.S. STATE REGULATIONS

RIGHT TO KNOW The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in Sections 2 and 15 of this Safety Data Sheet.

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

WARNING! This product contains a chemical(s) known to the State of California to cause cancer.

<u>Component</u>	<u>CAS #</u>	<u>Amount</u>
3-Chloro-1,2-propylene oxide (epichlorohydrin)	106-89-8	3000 ppm Maximum

CALIFORNIA PROPOSITION 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

WARNING! This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

<u>Component</u>	<u>CAS #</u>	<u>Amount</u>
3-Chloro-1,2-propylene oxide (epichlorohydrin)	106-89-8	3000 ppm Maximum

This product may contain trace quantities of other substances (glycidol and 1,3-Dichloro-2-propanol) known to the state of California to cause cancer and/or reproductive toxicity.

SECTION 16: OTHER INFORMATION

DISCLAIMER This product is intended for industrial use only and should be used in accordance with the manufacturer's recommendations. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. This SDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).

DATE OF REVISION January 26, 2016, *replaces the September 2, 2015 version.*

REASON FOR REVISION Added ECN (Taiwan) to the international listings in Section 15.

SDS PREPARED BY Glen Pearson

SDS APPROVED BY Robert Auerbach