

SAFETY DATA SHEET



Date Issued : 5/22/2015
 SDS No : 129210
 Date Revised : 5/22/2015
 Revision No : 1

Styrene Monomer

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Styrene Monomer
GENERAL USE: Additive: Reactive Diluent
PRODUCT CODE: 129210
MOLECULAR FORMULA: C₈H₈
ALTERNATE TRADE NAME(S): Cinnamene, Vinylbenzene, Ethenylbenzene, Inhibited Styrene

MANUFACTURER

Fiberglass Coatings Inc.
 4301A 34th Street North
 St. Petersburg, FL 33714
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Emergency Contact: Chem-Tel
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24 HR. EMERGENCY TELEPHONE NUMBERS

Chem-Tel (800) 255-3924

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Skin Irritation, Category 2
 Eye Irritation, Category 2A
 Acute Toxicity (Inhalation), Category 4
 Carcinogenicity, Category 2
 Target Organ Toxicity (Single exposure), Category 3 (Respiratory system)
 Target Organ Toxicity (Repeated exposure), Category 1 (Auditory System)
 Aspiration Hazard, Category 1

Physical:

Flammable Liquids, Category 3

GHS LABEL



Flame



Exclamation
mark



Health
hazard

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H226: Flammable liquid and vapor.
 H315: Causes skin irritation.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

H304: May be fatal if swallowed and enters airways.

H335: May cause respiratory irritation.

H351: Suspected of causing cancer.

H372: Causes damage to organs (Auditory system) through prolonged or repeated exposure if inhaled

PRECAUTIONARY STATEMENT(S)

Prevention:

P202: Do not handle until all safety precautions have been read and understood.

P210: Keep away from heat, sparks, open flames, and hot surfaces. – No smoking.

P240: Ground container and receiving equipment to prevent static discharge.

P241: Use explosion-proof electrical, ventilating, and lighting equipment.

P280: Wear protective gloves, protective clothing, eye protection and face protection.

P264: Wash skin thoroughly after handling.

P273: Avoid release to the environment.

P243: Take precautionary measures against static discharge.

Response:

P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

P332+P313: If skin irritation occurs: Get medical attention.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persists: Get medical advice.

P308+P313: IF exposed or concerned: Get medical advice

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or physician.

P301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P341: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call for medical assistance.

P370 + P378: In case of fire, use dry sand, dry chemical or alcohol-resistant foam for extinction

Storage:

P403+P235: Store in a well-ventilated place. Keep cool.

P233+P235: Keep container tightly closed at a cool to ambient temperature.

Disposal:

P501: Dispose of container and its contents in accordance with all Federal, State, and local regulations.

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear, Colorless Liquid, Pungent Odor.

IMMEDIATE CONCERNS: **Flammable liquid and vapor.** Aspiration hazard if swallowed, may cause lung damage. May cause eye, skin, respiratory, and digestive tract irritation. May cause central nervous system depression (CNS). May cause reproductive and fetus effects. May cause cancer based on animal studies. Uninhibited material may form explosive peroxides.

POTENTIAL HEALTH EFFECTS

EYES: Contact may cause eye irritation.

SKIN: May cause moderate to severe skin irritation. Prolonged exposure may cause skin burns.

INGESTION: May be harmful if swallowed. Symptoms include: gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration Hazard. Can cause chemical pneumonitis which can be fatal.

INHALATION: Breathing of high vapor concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness

and death. Vapors expected to be slightly irritating.

CARCINOGENICITY: IARC: Classified 2B (possible for humans)

ROUTES OF ENTRY: Skin, Inhalation, Eyes

TARGET ORGAN STATEMENT: Respiratory system (single exposure) and auditory system (prolonged exposure through inhalation)

CANCER STATEMENT: OSHA - No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA

ACGIH - No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH

NTP - Reasonably anticipated to be a human carcinogen.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Styrene	100	100-42-5

4. FIRST AID MEASURES

EYES: Flush eyes with water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do so. Seek immediate medical attention.

SKIN: Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INGESTION: Aspiration hazard. If swallowed, Do NOT induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Rinse mouth with water. Never give anything by mouth to an unconscious person. Call a physician immediately.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

NOTES TO PHYSICIAN: Styrene: Do not induce vomiting. Gastrointestinal decontamination in accidental petroleum distillate ingestions is not recommended, because of the severe aspiration hazard. Gastric lavage is indicated in those patients who require decontamination. Be sure that an endotracheal tube is in place prior to lavage; use cuffed tubes in patients over 7 years of age. All contaminated clothing should be removed, and contaminated skin areas washed with lipophilic soap, or green soap, and water. If ingested, cardiac and respiratory status must be continuously monitored. Be prepared to give oxygen and, if necessary, intubate. A chest x-ray should be taken immediately after stabilization of breathing and circulation to document aspiration and detect the presence of pneumothorax.

5. FIRE FIGHTING MEASURES

FLAMMABLE CLASS: Category 3 Flammable Liquid

EXTINGUISHING MEDIA: Alcohol-resistant foam, Carbon Dioxide (CO₂), Dry Chemical

HAZARDOUS COMBUSTION PRODUCTS: Produces carbon oxides (CO, CO₂).

FIRE FIGHTING PROCEDURES: Keep away from heat, flame, sparks and other ignition sources. Do not allow run off from fire fighting to enter drains or water courses. During a fire, irritating or toxic decomposition products may be generated.

Use a water spray to cool fully closed containers. Collect contaminated fire extinguishing water separately. Dispose of this water along with other fire residues in accordance with local regulations.

FIRE FIGHTING EQUIPMENT: Full Bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus (SCBA).

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Absorb with an inert material and put the spilled material in an appropriate waste disposal container.

LARGE SPILL: Flammable liquid. Keep away from heat and other sources of ignition. Eliminate all ignition sources. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV.

ENVIRONMENTAL PRECAUTIONS

WATER SPILL: Prevent from entering sewage and waterways. Local authorities should be advised if significant spillage can be contained.

7. HANDLING AND STORAGE

HANDLING: Use only in a well-ventilated area. Avoid formation of aerosol. Do not breathe vapors or dust. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid direct contact (eye, skin, inhalation, ingestion) when possible. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

STORAGE: NO SMOKING. Keep container tightly closed in a dry and well ventilated place. Containers must be opened and sealed carefully, and kept upright to prevent leakage. Prevent static discharge. Electrical installations and working materials must comply with the technological safety standards.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³
Styrene	TWA	50		20	85
	STEL	100		40	170

ENGINEERING CONTROLS: Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (PEL/TLV). Any installed emergency eye wash station or safety showers should be located near the work area.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Chemical splash goggles. Always use proper eye protection around the work area.

SKIN: Wear solvent resistant gloves (consult safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910. 134.

PROTECTIVE CLOTHING: Impervious clothing (Slicker suit, rubber boots) should be chosen according to the amount and concentration of the substance at the work place.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid.

ODOR: Aromatic, sweet

APPEARANCE: Colorless Liquid

COLOR: Colorless

pH: 7.20 - 25°C

PERCENT VOLATILE: No data available.

FLASH POINT AND METHOD: 31°C (88°F) Closed Cup

FLAMMABLE LIMITS: 1% to 6.1%

AUTOIGNITION TEMPERATURE: 490°C (914°F)

VAPOR PRESSURE: 6.67 hPa @ 20 C

VAPOR DENSITY: 3.6 (Air = 1)

BOILING POINT: 145°C (293°F) to 146°C (295°F)

MELTING POINT: -31°C (-24°F)

POUR POINT: No data available.

SOLUBILITY IN WATER: 320 g/L @ 25°C

Notes: Product is also soluble in ether, acetone and alcohol.

EVAPORATION RATE: 0.5 (Butyl Acetate = 1)

SPECIFIC GRAVITY: 0.906 (Water = 1)

VISCOSITY #1: 0.696 mPa at 25°C

(VOC): No data available.

OXIDIZING PROPERTIES: This substance is not classified as oxidizing

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

STABILITY: Stable under recommended storage conditions.

POLYMERIZATION: Under normal conditions of use, hazardous reactions will not occur. Extreme heat can cause rapid, uncontrolled polymerization.

CONDITIONS TO AVOID: Keep away from heat, flame, sparks and other ignition sources. Keep out of direct sunlight and avoid incompatible materials and elevated temperatures.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, acrid smoke and fumes, carbon dioxide and carbon monoxide, hydrocarbons

INCOMPATIBLE MATERIALS: Copper, oxidizing agents, peroxides, contamination, polymer catalysts, Alkali metals, aluminum chloride, strong acids or bases, metal halogenates

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
Styrene	5000 mg / kg (Rat)	> 2000 mg / kg (dermal Rabbit)	11.8 mg/L (4h)

DERMAL LD₅₀: > 2000 mg/kg (Rabbit)

ORAL LD₅₀: 2650 mg/kg (Rat)

INHALATION LC₅₀: 12 mg/L (rat)

EYE EFFECTS: Causes eye irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury.

SKIN EFFECTS: Causes mild skin irritant.

Prolonged or repeated exposure: may cause defatting of the skin, which can lead to dermatitis.

CARCINOGENICITY

IARC: Group 2B - Possibly carcinogenic for humans.

NTP: Reasonably anticipated to be a human carcinogen

OSHA: Possible select carcinogen.

Notes: Listed by IARC as possibly carcinogenic to humans (Group 2B), based on limited evidence of carcinogenicity in humans and experimental animals.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: Readily Biodegradable.

ECOTOXICOLOGICAL INFORMATION: Toxic to fish, invertebrates and microorganisms, however, substantial aquatic exposure is not expected based on the volatile nature of this material.

BIOACCUMULATION/ACCUMULATION: This material is not expected to bioaccumulate.

AQUATIC TOXICITY (ACUTE): Acute toxicity to fish. Toxicity to aquatic plants.

96-HOUR LC₅₀: 4.02 mg / L (Fathead Minnow)

48-HOUR EC₅₀: 4.7 mg/L (Daphnia Magna)

96-HOUR EC₅₀: 4.9 mg/L (Green Algae)

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Disposal should be in accordance with all Federal, State, and local regulations. Empty containers may still be considered dangerous due to residual vapors/liquid/dust.

PRODUCT DISPOSAL: Empty remaining contents and dispose of any unused product. Do not reuse empty containers. Do not burn or use a cutting torch on empty drums.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Styrene Monomer, stabilized

PRIMARY HAZARD CLASS/DIVISION: 3

UN/NA NUMBER: 2055

PACKING GROUP: III

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 1000 lbs (STYRENE)

ROAD AND RAIL (ADR/RID)

PROPER SHIPPING NAME: Styrene Monomer, stabilized

UN NUMBER: 2055

HAZARD CLASS: 3

PACKING GROUP: III

AIR (ICAO/IATA)

SHIPPING NAME: Styrene Monomer, stabilized

UN/NA NUMBER: 2055

PRIMARY HAZARD CLASS/DIVISION: 3

PACKING GROUP: III

VESSEL (IMO/IMDG)

SHIPPING NAME: Styrene Monomer, stabilized

UN/NA NUMBER: 2055

PRIMARY HAZARD CLASS/DIVISION: 3

PACKING GROUP: III

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Fire Hazard, Immediate (acute) Health Hazard, Chronic (Delayed) Health Hazard, Reactivity.

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** Yes **ACUTE:** Yes **CHRONIC:** Yes

313 REPORTABLE INGREDIENTS: Styrene

TITLE III NOTES: Components meeting the requirements are listed.

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: Listed.

THRESHOLD QUANTITY: 1000 lbs.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ: 1000 pounds

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: Listed.

CLEAN AIR ACT

40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION: Listed.

OSHA HAZARD COMM. RULE: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. It is classified as a flammable liquid, carcinogen, moderate skin irritant, severe eye irritant,

moderate respiratory irritant and mutagen.

CLEAN WATER ACT: Listed.

CANADA

WHMIS (WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM): Listed.

WHMIS CLASS: B2 Flammable Liquid

DOMESTIC SUBSTANCE LIST (INVENTORY): Listed.

16. OTHER INFORMATION

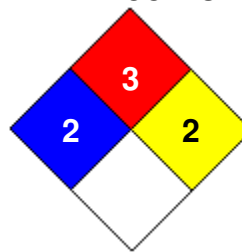
PREPARED BY: GS

REVISION SUMMARY: This MSDS replaces the 1/20/2014 MSDS. Revised: **Section 2:** CANCER STATEMENT, TARGET ORGAN STATEMENT. **Section 5:** EXTINGUISHING MEDIA, FIRE FIGHTING PROCEDURES. **Section 6:** WATER SPILL. **Section 7:** HANDLING, STORAGE. **Section 8:** PERSONAL PROTECTIVE EQUIPMENT - PROTECTIVE CLOTHING. **Section 9:** FLAMMABLE LIMITS, FLASH POINT AND METHOD, ODOR, OXIDIZING PROPERTIES, pH, SOLUBILITY IN WATER, VAPOR PRESSURE, VISCOSITY #1. **Section 10:** CONDITIONS TO AVOID, HAZARDOUS DECOMPOSITION PRODUCTS, INCOMPATIBLE MATERIALS. **Section 11:** ACUTE (DERMAL LD₅₀ (rabbit), DERMAL LD₅₀ (rabbit), ORAL LD₅₀ (rat), ORAL LD₅₀ (rat), INHALATION LC₅₀ (rat), INHALATION LC₅₀ (rat)), TARGET ORGANS. **Section 12:** AQUATIC TOXICITY (ACUTE) - 96-HOUR LC₅₀. **Section 13:** PRODUCT DISPOSAL. **Section 15:** OSHA HAZARD COMM. RULE.

HMIS RATING

HEALTH	*	2
FLAMMABILITY		3
PHYSICAL HAZARD		2
PERSONAL PROTECTION		

NFPA CODES



HMIS RATINGS NOTES: The customer is responsible for determining the PPE code for this material.

MANUFACTURER DISCLAIMER: This information is compiled from sources believed reliable as of the date of issue, it is provided in good faith and correct to the best of our knowledge. No warranty, guarantee, or representation is made as to the sufficiency of the information for the safe use of the product nor to relieve the end user of their own Federal, State, and local regulatory compliance requirements.