



# MATERIAL SAFETY DATA SHEET

**Chemtrec 24-Hour Emergency Telephone**  
Domestic North America (800) 424-9300  
International (703) 527-3887

*This MSDS complies with 29 CFR 1910.1200  
(Hazard Communication)*

## 1. Product and Supplier Identification / Product Hazard Summary

**Product:** Styrene Monomer  
**Product No:** 063P, 063Q, 063G, 063F, 063D  
**Trade Name:** Styrene Monomer  
**Supplier:** Fiberlay Inc.  
24 S. Idaho St  
Seattle, Wa 98134  
(206)782-0660

### HMIS

**HEALTH: 2**

**\*CAUTION!**

- \*May be harmful if swallowed or inhaled
- \*May be irritating to the skin eyes and respiratory tract
- \*May cause allergic skin reaction
- \*Heated material may cause thermal burns

**FLAMMABILITY: 3**

\*Warning! Flammable  
Liquid & Vapor

**REACTIVITY: 2**

\*Caution! Unstable at  
high temperatures

**SPECIFIC HAZARD: -**

## 2. Composition

Component	CAS No.	% by Weight
Styrene Monomer	100-42-5	100%

## 3. Hazards Identification

### Potential Health Effects:

#### **Routes of exposure**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

**Eye contact:** Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

**Skin contact:** Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

**Ingestion:** Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

**Inhalation:** Breathing of vapor or mist is possible. Breathing of vapor or mist is possible. Breathing aerosol and/or mist is possible material is sprayed. Aerosol and mist may present a greater risk of injury because more material may be present in the air than from vapor alone. Breathing small amounts of this material

during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable.

**Aggravated Medical Condition:** Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: upper respiratory tract, skin, lung (for example, asthma-like conditions), liver, central nervous system, male reproductive system, auditory system.

**Symptoms:** Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include; metallic taste, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, lack of coordination, confusion, liver damage.

**Target Organs:** Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals; mild, reversible kidney effects, effects on hearing, respiratory tract damage (nose, throat, and airways), testis damage, liver damage, overexposure to this material (or its components) has been suggested as a cause of the following effects in humans; mild effects on color vision, effects on hearing, respiratory tract damage (nose, throat, and airways), central nervous system effects.

**Carcinogenicity:** There was no increase in cancer in rats exposed to styrene by inhalation. However, there was an increase in lung cancer in styrene-exposed mice. The relevance of the mouse lung cancer to humans is uncertain. Styrene did not cause cancer in mice in studies in which the chemical was placed in the stomachs through a feeding tube, or in a study in which styrene was given by injection. Epidemiological studies do not provide a basis for concluding that styrene causes cancer. Styrene is listed as a possible human carcinogen by the IARC.

**Reproductive Hazard:** This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

**Other Information:** Styrene readily reacts with low concentrations of halogens (for example, fluorine, chlorine, bromine, or iodine) to form a tear-producing substance.

## 4. First Aid Measures

**Eyes:** If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

**Skin:** Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

**Ingestion:** Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

**Inhalation:** If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

**Notes to Physician:** Hazards; This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity when deciding whether to induce vomiting.

## 5. Fire Fighting Measures

**Suitable Extinguishing Media:** Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam, Water spray

**Hazardous combustion products:** May form: carbon dioxide and carbon monoxide, toxic fumes, hydrocarbons

**Precautions for fire-fighting:** Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. During a fire, irritating or toxic decomposition products may be generated. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Polymerization will take place under fire conditions. If polymerization occurs in a closed container, there is a possibility it will rupture violently. Cool storage container with water, if exposed to fire.

**Flammability Class for Flammable Liquids:** Flammable Liquid Class I/Flammable Liquid Class IC

## 6. Accidental Release Measures

**Personal precautions:** For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

**Environmental precautions:** Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

**Methods for cleaning up:** Absorb liquid on vermiculite, floor absorbent or other absorbent material.

## 7. Handling and Storage

**Handling:** Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

**Storage:** Store in closed containers in a dry, well-ventilated area. Do not store near extreme heat, open flame, or sources of ignition.

## 8. Exposure Controls, Personal Protection

**Exposure Guidelines:**

STYRENE	100-42-5	
ACGIH	Time weighted average	20 ppm
ACGIH	Short term exposure limit	40 ppm
NIOSH	Recommended exposure limit	50 ppm
NIOSH	Recommended exposure limit	215 mg/m <sup>3</sup>
NIOSH	Short term exposure limit	100 ppm
NIOSH	Short term exposure limit	425 mg/m <sup>3</sup>
OSHAZ2	Time weighted average	100 ppm
OSHAZ2	Ceiling limit value	200 ppm
OSHAZ2	Maximum concentration	600 ppm

**General advice:** These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

**Exposure controls:** Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s). OSHA has formally endorsed a styrene industry proposal for a voluntary 50 ppm workplace limit on styrene. Members of the Styrene Information and Research Council (SIRC), Composites Institute (CI), Composite Fabricators Association (CFA), International Cast Polymers Association (ICPA) and National Marine Manufacturers Association (NMMA) have agreed to use either engineering controls, work practices or respiratory protection to achieve this voluntary limit for styrene.

**Eye protection:** Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

**Skin and body protection:** Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots. Wear resistant gloves such as: polyvinyl alcohol.

**Respiratory protection:** If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

## 9. Physical and Chemical Properties

**Physical State:** Liquid

**Color:** Colorless to yellowish

**Odor:** None

**Boiling Point:** 293°F (145°C)

**Melting Point:** -24°F (-31°C)

**Flash Point:** 93.9 op/ 34.4 oc, Tag closed cup

**Evaporation rate:** 0.49

**Vapor pressure:** 0.85 kPa @ 77°F (25°C)

**Vapor density:** 3.6

**Solubility:** Negligible in water

**Auto ignition temp:** 914°F (490°C)

**Explosion limits:** 1.1%(V) 6.1%(V)

## 10. Stability and Reactivity

**Stability:** This material is unstable at elevated temperatures and pressures.

**Conditions to avoid:**

Avoid heat, open flame, and prolonged storage at elevated temperatures., Avoid contact with:, excessive heat

**Incompatible products:** Avoid contact with:, Acids, aluminum chloride, halogens, iron chloride, metal salts, Peroxides, strong alkalis, strong oxidizing agents

**Hazardous decomposition products:**

May form:, carbon dioxide and carbon monoxide, toxic fumes, hydrocarbons

**Hazardous reactions:** Product can undergo hazardous polymerization., Avoid exposure to excessive heat, peroxides and polymerization catalysts.

**Thermal decomposition:** No data

## 11. Toxicological Information

**Acute oral toxicity**

STYRENE

LD 50 Rat: 2,650 mg/kg

**Acute inhalation toxicity**

STYRENE

LC 50 Rat: 2800 ppm, 4 h

## 12. Ecological Information

**Aquatic toxicity**

**Acute and Prolonged Toxicity to Fish:** No data

**Acute Toxicity to Aquatic Invertebrates:** No data  
**Environmental fate and pathways:** No data

## 13. Disposal Considerations

**Waste disposal methods:** Dispose of in accordance with all applicable local, state and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

## 14. Transport Information

**IMDG:**

UN2055, STYRENE MONOMER, STABILIZED 3, III

**IATA\_P:**

UN2055, Styrene monomer, stabilized 3, III

**IATA\_C:**

UN2055, Styrene monomer, stabilized 3, III

**CFR ROAD:**

UN2055, Styrene monomer, stabilized 3, III

**CFR RAIL:**

UN2055, Styrene monomer, stabilized 3, III

**CFR INWTR:**

UN2055, Styrene monomer, stabilized 3, III

## 15. Other Information

California Proposition 65 involving warnings of the presence of certain listed chemicals is now in effect.

“Warning: This product may contain trace amounts of some chemicals considered by the State of California to be carcinogens or reproductive Toxicants.”

Preparation Date: 3/13/2013