

Section 1 Chemical Product

MSDS Name: TC-Styrene

Synonym: Ethenylbenzene; Cinnamene; Cinnamenol; Ethenylbenzene; Phenethylene; Styrol;

Vinylbenzene; Vinylbenzol.

Section 2 COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
100-42-5	Styrene	>99	202-851-5

Hazard Symbols: XN

Risk Phrases: 10 36/38 20

Section 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Flammable. Irritating to eyes and skin. Harmful by inhalation.

Potential Health Effects

Eye:

Causes eye irritation.

Skin:

May be absorbed through the skin in harmful amounts. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis.

Ingestion:

May cause central nervous system depression, characterized by excitement, followed by headache, Dizziness, drowsiness, and nausea.

Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

Inhalation:

Aspiration may cause respiratory swelling and pneumonitis. Causes narcotic effects including headache, dizziness, weakness, unconsciousness, and possible death.

Chronic:

No information found.

Section 4 FIRST AID MEASURES

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Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion:

Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively.

Section 5 FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air.

Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Containers may explode in the heat of a fire.

Extinguishing Media:

This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained. Use water fog, dry chemical, carbon dioxide, or regular foam.

Section 6 ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Use a spark-proof tool. Provide ventilation.

Section 7 HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area.

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Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with skin and eyes. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges.

Avoid ingestion and inhalation. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage:

Keep away from sources of ignition. Store in a cool place in the original container and protect from sunlight. Keep refrigerated.

(Store below 4C/39F.) Keep containers tightly closed.

Section 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits CAS# 100-42-5: United Kingdom, WEL - TWA: 100 ppm TWA; 430 mg/m³ TWA United Kingdom, WEL - STEL: 250 ppm STEL; 1080 mg/m³ STEL United States OSHA: 100 ppm TWA; 200 ppm Ceiling Belgium - TWA: 50 ppm VLE; 216 mg/m³ VLE Belgium - STEL: 100 ppm VLE; 432 mg/m³ VLE France - VME: 50 ppm VME; 215 mg/m³ VME Germany: 20 ppm TWA; 86 mg/m³ TWA Japan: 20 ppm OEL; 85 mg/m³ OEL Malaysia: 20 ppm TWA; 85.2 mg/m³ TWA Netherlands: 25 ppm MAC; 107 mg/m³ MAC Russia: 30 mg/m³ TWA Russia: 10 mg/m³ STEL Spain: 20 ppm VLA-ED; 86 mg/m³ VLA-ED Spain: 40 ppm VLA-EC; 172 mg/m³ VLA-EC Personal Protective Equipment Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to minimize contact with skin.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: clear, colorless

Odor: pungent odor

pH: Not available.

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Vapor Pressure: 568 mm Hg
Viscosity: 0.751 mPa
Boiling Point: 293 deg F
Freezing/Melting Point: -23 deg F
Autoignition Temperature: 914 deg F (490.00 deg C)
Flash Point: 32 deg C (89.60 deg F)
Explosion Limits, lower: 1.1% v/v
Explosion Limits, upper: 7.0% v/v
Decomposition Temperature: Not available.
Solubility in water: Practically insoluble in water
Specific Gravity/Density: 0.9060
Molecular Formula: C8 H8
Molecular Weight: 104.1

Section 10 STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures. May form peroxides in the absence of inhibitors.

Conditions to Avoid:

Incompatible materials, ignition sources.

Incompatibilities with Other Materials:

Vapor is explosive when exposed to heat or flame and reacts with oxygen at temperatures above 104 F, uninhibited material may form explosive peroxides. Uninhibited material may polymerize which becomes self-sustaining at temperatures above 65 C. Exposure to butyllithium, dibenzoyl peroxide, azoisobutyronitrile or di-tert-butylperoxide may cause violent polymerization. Violent reaction with chlorosulfonic acid, oleum, sulfuric acid and oxidizers. Oxygen + heat is explosive.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide.

Hazardous Polymerization: May occur.

Section 11 TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 100-42-5: WL3675000 LD50/LC50:

CAS# 100-42-5: Draize test, rabbit, eye: 100 mg Severe; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 100% Moderate; Inhalation, mouse: LC50 = 21000 mg/m³/2H; Inhalation, mouse: LC50 = 9500 mg/m³/4H;

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Inhalation, rat: LC50 = 11800 mg/m³/4H; Oral, mouse:LD50 = 316 mg/kg; Oral, rat: LD50 = 2650 mg/kg; Oral, rat: LD50 = 5000 mg/kg.

Carcinogenicity:

Styrene - IARC: Group 2B carcinogen Other:

See actual entry in RTECS for complete information.

Section 12 ECOLOGICAL INFORMATION

Ecotoxicity:

Cas# 100-42-5: LC50(96Hr.)Fathead Minnow = 46.4 mg/L; Static Bioassay Softwater.

LC50(96Hr.)Fathead Minnow = 59.30 mg/L; Static Bioassay, Hardwater.

LC50(96Hr.)Bluegill = 25.05 mg/L; Static Bioassay, Softwater.

LC50(96Hr.)Goldfish = 64.74 mg/L; Static Bioassay, water.

LC50(48Hr.) Water flea = 23.0 mg/L, Unspecified Bioassay.

EC50(48Hr.) Water flea = 23.0 mg/L; Unspecified Bioassay.

Section 13 DISPOSAL CONSIDERATIONS

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Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 TRANSPORT INFORMATION

IATA

Shipping Name: STYRENE MONOMER, INHIBITED

Hazard Class: 3

UN Number: 2055

Packing Group: III

IMO

Shipping Name: STYRENE MONOMER, INHIBITED

Hazard Class: 3.3

UN Number: 2055

Packing Group: III

RID/ADR

Shipping Name: STYRENE MONOMER, INHIBITED

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Hazard Class: 3

UN Number: 2055

Packing group: III

USA RQ: CAS# 100-42-5: 1000 lb final RQ; 454 kg final RQ

Section 15 REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:

R 10 Flammable.

R 20 Harmful by inhalation.

R 36/38 Irritating to eyes and skin.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

WGK (Water Danger/Protection)

CAS# 100-42-5: 2

Canada

CAS# 100-42-5 is listed on Canada's DSL List.

CAS# 100-42-5 is listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 100-42-5 is listed on the TSCA inventory.

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