

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Styrene**
Product Number : S4650
Brand : Sigma
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₈H₈
Molecular Weight : 104.15 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Styrene			
100-42-5	202-851-5	601-026-00-0	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable Liquid
Irritant
Carcinogen

Target Organs

Central nervous system, Blood, Lymphatic system., Endocrine system.

HMIS Classification

Health Hazard: 2

Chronic Health Hazard: *

Flammability: 3

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire : 3

Reactivity Hazard: 0

Potential Health Effects

Inhalation

May be harmful if inhaled. May cause respiratory tract irritation.

Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 32.0 °C (89.6 °F) - closed cup

Ignition temperature 480 °C (896 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Specific hazards

Container explosion may occur under fire conditions. Vapours may form explosive mixture with air.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Light sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Styrene	100-42-5	TWA	20 ppm 85 mg/m ³	1997-05-21	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
		STEL	40 ppm 170 mg/m ³	1997-05-21	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004: Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
		TWA	50 ppm 215 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
Remarks	See Table Z-2.				
		STEL	100 ppm 425 mg/m ³	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
	See Table Z-2.				
		TWA	100 ppm	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration; (OSHA) Standards, Toxic and Hazardous Substances, Subpart Z 29 CFR Part 1910.1000, Table Z-2
	(Z37.15-1969)				
		CEIL	200 ppm	1993-06-30	US. Department of Labor -

					Occupational Safety and Health Administration; (OSHA) Standards, Toxic and Hazardous Substances, Subpart Z 29 CFR Part 1910.1000, Table Z-2
(Z37.15-1969)					
		AMP	600 ppm	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration; (OSHA) Standards, Toxic and Hazardous Substances, Subpart Z 29 CFR Part 1910.1000, Table Z-2
(Z37.15-1969)					

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid, clear

Colour colourless

Safety data

pH no data available

Melting point -31.0 °C (-23.8 °F)

Boiling point 145.0 - 146.0 °C (293.0 - 294.8 °F)

Flash point 32.0 °C (89.6 °F) - closed cup

Ignition temperature 480 °C (896 °F)

Lower explosion limit 1.1 %(V)

Upper explosion limit 8.9 %(V)

Vapour pressure 16.5 hPa (12.4 mmHg) at 37.7 °C (99.9 °F)

5.7 hPa (4.3 mmHg) at 15.0 °C (59.0 °F)

Density 0.91 g/cm³
Water solubility insoluble

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.
May polymerize on exposure to light.

Materials to avoid

Oxidizing agents, Copper

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD₅₀ Oral - rat - 2,650 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Liver:Other changes.

LC₅₀ Inhalation - rat - 4 h - 12,000 mg/m³

Irritation and corrosion

Skin - rabbit - Skin irritation

Eyes - rabbit - Eye irritation - 24 h

Sensitisation

no data available

Chronic exposure

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Laboratory experiments have shown mutagenic effects.

Signs and Symptoms of Exposure

Dermatitis, Central nervous system depression, Nausea, Dizziness, Headache

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Central nervous system, Blood, Lymphatic system., Endocrine system.,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Styrene

CAS-No.
100-42-5

Revision Date
1987-01-01

Pennsylvania Right To Know Components

Styrene

CAS-No.
100-42-5

Revision Date
1987-01-01

New Jersey Right To Know Components

Styrene

CAS-No.
100-42-5

Revision Date
1987-01-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

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