



Safety Data Sheet

Version 7.0
Revision Date: 11/12/2018

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: **Styrene- α,β,β -d₃**
Product abbreviation: D3S
Product use: For laboratory research purposes.
Supplier / Manufacturer: Polymer Source, Inc.
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2. HAZARDS IDENTIFICATION

Emergency overview: Target organs: Blood, central nervous system, endocrine system, lymphatic system.

WHMIS classification: B2. Flammable liquid.
D2A. Very toxic material causing other toxic effects: Chronic toxicity.
D2B. Toxic material causing other toxic effects: Teratogen. Carcinogen. Moderate skin irritant. Moderate eye irritant.

GHS classification: Flammable liquids (Category 3),
Acute toxicity, Inhalation (Category 4),
Skin corrosion / irritation (Category 2),
Serious eye damage / eye irritation (Category 2A),
Reproductive toxicity (Category 2),
Specific target organ toxicity – repeated exposure (Category 1),
Acute aquatic toxicity (Category 2).

GHS Label elements, including precautionary statements:

Pictogram:



Signal word:

Danger

- Hazard statements:
- H226. Flammable liquid and vapour.
 - H315. Causes skin irritation.
 - H319. Causes serious eye irritation.
 - H332. Harmful if inhaled.
 - H361. Suspected of damaging fertility or the unborn child.
 - H372. Causes damage to organs through prolonged or repeated exposure.
 - H401. Toxic to aquatic life.
- Precautionary statements:
- P201. Obtain special instructions before use.
 - P202. Do not handle until all safety precautions have been read and understood.
 - P210. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 - P233. Keep container tightly closed.
 - P240. Ground and bond container and receiving equipment.
 - P241. Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 - P242. Use non-sparking tools.
 - P243. Take action to prevent static discharges.
 - P260. Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 - P264. Wash 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.
 - P273. Avoid release to the environment.
 - P280. Wear protective gloves/ protective clothing/ eye protection/ face protection.
 - P303 + P361 + P353. *IF ON SKIN (or hair):*
Take off immediately all contaminated clothing.
Rinse skin with water.
 - P304 + P340 + P312. *IF INHALED:*
Remove person to fresh air and keep comfortable for breathing. Call a Poison Center or doctor if you feel unwell.
 - P305 + P351 + P338. *IF IN EYES:*
Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do.
Continue rinsing.
 - P308 + P313. *IF exposed or concerned:*
Get medical advice/ attention.
 - P332 + P313. *If skin irritation occurs:*
Get medical advice/ attention.

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

P370 + P378. *In case of fire:*
Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

P405. Store locked up.

P501. Dispose of contents/ container to an approved waste disposal plant.

HMIS classification:	Health hazard:	2
	Chronic health hazard:	*
	Flammability:	3
	Physical hazards:	0

Potential health effects:	Inhalation:	May be harmful if inhaled. Causes respiratory tract irritation.
	Skin:	May be harmful if absorbed through skin. Causes skin irritation.
	Eyes:	Causes eye irritation.
	Ingestion:	May be harmful if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Formula:	C ₈ D ₃ H ₅
Molecular weight:	107.17 g/mol
Concentration:	≤ 100 %
CAS registry number:	Styrene- α,β,β -d ₃ : 3814-93-5

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. Take victim immediately to hospital. 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

Suitable extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special protective equipment for firefighters:	Wear self contained breathing apparatus for firefighting if necessary.

Hazardous combustion products:	Hazardous decomposition products formed under fire conditions: Carbon oxides.
Explosion data:	Sensitivity to mechanical impact: no data available Sensitivity to static discharge: no data available
Further information:	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Methods and materials for containment and cleaning up:	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (See section 13).

7. HANDLING AND STORAGE

Precautions for safe 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.
Conditions for safe storage:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store under inert gas. hygroscopic

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters:

<i>Components</i>	<i>Value</i>	<i>Control parameters</i>	<i>Basis</i>	<i>Remarks</i>
Styrene- α,β,β -d3 (CAS-No.: 3814-93-5)	TWA	20 ppm 85 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (Table 2: OEL).	
	STEL	40 ppm 170 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (Table 2: OEL).	
	TWA	50 ppm	Canada. British Columbia OEL.	IARC '2B' applies to substances deemed possibly carcinogenic to humans.

<i>Components</i>	<i>Value</i>	<i>Control parameters</i>	<i>Basis</i>	<i>Remarks</i>
Styrene-d8 (CAS-No.: 19361-62-7)	STEL	75 ppm	Canada. British Columbia OEL.	IARC '2B' applies to substances deemed possibly carcinogenic to humans.
	TWA	35 ppm	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.	
	STEL	100 ppm	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.	
	STEV	100 ppm 426 mg/m ³	Québec. Regulation respecting occupational health and safety (Schedule 1, Part 1: Permissible exposure values for airborne contaminants).	Skin (percutaneous): Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.
	TWAEV	50 ppm 213 mg/m ³	Québec. Regulation respecting occupational health and safety (Schedule 1, Part 1: Permissible exposure values for airborne contaminants).	Skin (percutaneous): Carcinogenic effect detected in animals. Results of studies relating to the carcinogenicity of these substances in animals are not necessarily applicable to humans.
	TWA	20 ppm	USA. ACGIH Threshold Limit Values (TLV).	
	STEL	40 ppm	USA. ACGIH Threshold Limit Values (TLV).	

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. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- Eye protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- Skin and body protection: Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- Specific engineering controls: Use mechanical exhaust or laboratory fumehood to avoid exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Form:	Liquid, clear
	Colour:	Colourless
Safety data:	pH:	no data available
	Melting point / Freezing point:	m.p.(lit.): -31 °C (-24 °F)
	Bolting point:	b.p.(lit.): 145–146 °C (293–295 °F)
	Flash point:	(lit.): ca. 32 °C (90 °F) – closed cup
	Ignition temperature:	no data available
	Auto-ignition temperature:	(lit.): ca. 490 °C (914 °F)
	Lower explosion limit:	(lit.): ca. 1.1 % (V)
	Upper explosion limit:	(lit.): ca. 8.9 % (V)
	Vapour pressure:	(lit.): ca.6 hPa (5 mmHg) at ca.20 °C (68 °F)
	Density:	(lit.): 0.935 g/mL at 25 °C (77 °F)
	Water solubility:	(lit.): ca.0.05 g/l at ca.25 °C (77 °F), slightly soluble
	Partition coefficient: n-octanol/water:	no data available
	Relative vapour density:	(lit.): ca. 3.6
	Odour:	sweet
	Odour threshold:	no data available
	Evaporation rate:	no data available

10. STABILITY AND REACTIVITY

Chemical stability:	Stable under recommended storage conditions.
Radioactivity:	Stable isotope compound. Not radioactive.
Possibility of hazardous reactions:	Vapours may form explosive mixture with air.
Conditions to avoid:	Heat, flames and sparks.
Materials to avoid:	no data available
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Carbon oxides. Other decomposition products: no data available.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	Oral LD50:	no data available
	Inhalation LC50:	no data available
	Dermal LD50:	no data available
	Other information on acute toxicity:	no data available
Skin corrosion/irritation:	no data available	
Serious eye damage/eye irritation.	no data available	
Respiratory or skin sensitization:	no data available	
Germ cell mutagenicity:	no data available	
Carcinogenicity:	no data available	
	IARC: Group 2B: Possibly carcinogenic to humans (Styrene- α,β,β -d3).	
Reproductive toxicity:	no data available	
Teratogenicity:	no data available	
Specific target organ toxicity:	Single exposure (Globally Harmonized System):	no data available
	Repeated exposure (Globally Harmonized System):	no data available
Aspiration hazard:	no data available	
Potential health effects:	Inhalation:	May be harmful if inhaled. Causes respiratory tract irritation.
	Ingestion:	May be harmful if swallowed.
	Skin:	May be harmful if absorbed through skin. Causes skin irritation.
	Eyes:	Causes eye irritation.
Signs and symptoms of exposure:	To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.	
	Nausea, Headache, Vomiting, Central nervous system depression, Dermatitis.	
Synergistic effects:	no data available	
Additional information:	RTECS:	not available

12. ECOLOGICAL INFORMATION

Toxicity:	no data available
Persistence and degradability:	no data available
Bioaccumulative potential:	no data available
Mobility in soil:	no data available
PBT and vPvB assessment:	no data available
Other adverse effects:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product:	Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
Contaminated packaging:	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US):	UN number: 2055 Class: 3 Packing group: III Proper shipping name: Styrene monomer Reportable Quantity (RQ): 1000 lbs Marine pollutant: No Poison Inhalation Hazard: No
IMDG:	UN number: 2055 Class: 3 Packing group: III EMS-No: F-E, S-D Proper shipping name: Styrene monomer Marine pollutant: No
IATA:	UN number: 2055 Class: 3 Packing group: III Proper shipping name: Styrene monomer

15. REGULATORY INFORMATION

WHMIS classification:	B2	Flammable liquid.
	D2A.	Very toxic material causing other toxic effects: Chronic toxicity.
	D2B.	Toxic material causing other toxic effects: Teratogen. Carcinogen. Moderate skin irritant. Moderate eye irritant.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16. OTHER INFORMATION

Date of the latest revision:	11 December 2018
Further information:	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Polymer Source, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See www.polymersource.ca for additional terms and conditions of sale.