

# SAFETY DATA SHEET



Revision date: 01-Mar-2021

Revision Number 6

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### Product identifier

Product Name STYRENE MONOMER

Product Code(s) 000030129501

### Other means of identification

UN number 2055

CAS No. 100-42-5

Synonyms Phenyl ethene; Phenyl ethylene; Vinyl benzene.

Pure substance/mixture Substance

### Recommended use of the chemical and restrictions on use

Recommended use Production of polystyrene products. Restricted to professional users.

Uses advised against No information available.

### Supplier

Ixom Operations Pty Ltd  
ABN: 51 600 546 512  
Level 8, 1 Nicholson Street  
Melbourne 3000  
Australia

Telephone Number: +61 3 9906 3000

### Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

### GHS Classification

Flammable liquids	Category 3 - (H226)
Aspiration hazard	Category 1 - (H304)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 2 - (H319)
Reproductive toxicity	Category 2 - (H361)
Specific target organ toxicity (repeated exposure)	Category 1 - (H372)
Acute aquatic toxicity	Category 2 - (H401)

SIGNAL WORD

Danger

**Label elements**

Flame  
Health hazard  
Exclamation mark



**Hazard statements**

H226 - Flammable liquid and vapor  
H304 - May be fatal if swallowed and enters airways  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H332 - Harmful if inhaled  
H361d - Suspected of damaging the unborn child  
H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Use personal protective equipment as required  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Do not breathe fume, gas, mist, vapours, spray  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Use explosion-proof electrical, ventilating, lighting equipment

**Precautionary Statements - Response**

If exposed or concerned: Get medical advice/attention  
Specific treatment (see First aid on this SDS)  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
If eye irritation persists: Get medical advice/attention  
If skin irritation occurs: Get medical advice/attention  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
Rinse mouth  
Do NOT induce vomiting  
In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Precautionary Statements - Storage**

Store locked up  
Store in a well-ventilated place. Keep cool

**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Other hazards which do not result in classification**

Toxic to aquatic life

**Poisons Schedule (SUSMP)**

5

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Chemical name	CAS No.	Weight-%
Styrene	100-42-5	99-100

### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance.
<b>Emergency telephone number</b>	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
<b>Inhalation</b>	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash skin with soap and water. Call a physician if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately if symptoms occur.

#### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Irritation. Erythema (skin redness). Swelling of tissue. Coughing and/ or wheezing. Difficulty in breathing. Burning sensation. Aspiration risk: may cause lung damage if swallowed.
-----------------	--

#### Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Aspiration may cause pulmonary edema and pneumonitis. Effects may be delayed. Symptoms may be delayed.
---------------------------	--

### 5. FIRE FIGHTING MEASURES

#### Suitable Extinguishing Media

<b>Suitable Extinguishing Media</b>	Dry chemical, CO2, water spray or regular foam.
-------------------------------------	---

<b>Unsuitable extinguishing media</b>	High volume water jet.
---------------------------------------	------------------------

#### Specific hazards arising from the chemical

<b>Specific hazards arising from the chemical</b>	Flammable. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Flash back possible over considerable distance. May form explosive mixtures with air. Cool drums with water spray.
---	---

#### Special protective actions for fire-fighters

---

<b>Special protective equipment for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
<b>Hazchem code</b>	3Y

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** All equipment used when handling the product must be grounded. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes, and clothing. Do not touch or walk through spilled material. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment as required. Wash thoroughly after handling.

**For emergency responders** Use personal protection recommended in Section 8.

### Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use non-sparking tools.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid breathing vapors or mists. Avoid contact with skin, eyes, and clothing. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking and explosion proof. Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Remove all sources of ignition. Take precautionary measures against static discharges. Keep out of reach of children.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep at a temperature not exceeding 25 °C. Store away from foodstuffs and sources of heat or ignition. Protect from direct sunlight. Keep container closed when not in use.

This material is a Scheduled Poison and must be stored, maintained and used in accordance with the relevant regulations.

**Incompatible materials** Strong oxidizing agents. Copper.

**Other information** Inhibitor levels must be maintained.

**Poisons Schedule (SUSMP)** 5

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters****Exposure Limits**

Styrene, monomer: 8hr TWA = 213 mg/m<sup>3</sup> (50 ppm), 15 min STEL = 426 mg/m<sup>3</sup> (100 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

STEL (Short Term Exposure Limit) - the airborne concentration of a particular substance calculated as a time-weighted average over 15 minutes, which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

**Appropriate engineering controls****Engineering controls**

Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

**Individual protection measures, such as personal protective equipment**

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

**Eye/face protection**

Goggles.

**Skin and body protection**

Antistatic boots. Wear fire/flammable resistant/retardant clothing. Overalls.

**Hand protection**

Impervious gloves.

**Respiratory protection**

If determined by a risk assessment an inhalation risk exists, wear an organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

**Environmental exposure controls**

No information available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Oily
Color	Colourless to Yellowish
Odor	Aromatic Hydrocarbon
Odor threshold	0.1 ppm

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	-31°C	None known
Boiling point / boiling range	145°C	None known
Flash point	32 °C	None known
Evaporation rate	12.4 (n-Butyl acetate = 1)	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	6.1% (V)	
Lower flammability or explosive limits	1.1% (V)	
Vapor pressure	670 Pa @20°C	None known
Vapor density	3.6	None known
Relative density	906 kg/m <sup>3</sup> (Density)	None known
Water solubility	0.29 g/l @ 20 °C	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	490°C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	0.77 cSt	@ 25 °C
Dynamic viscosity	No data available	None known

### Other information

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactivity Reacts with strong oxidising agents.

### Chemical stability

Stability Stable under normal conditions. Stabilizer can lose its effectiveness if stored over a long period of time.

### Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

### Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Hazardous polymerization may occur.

### Conditions to avoid

**Conditions to avoid** Heat, flames and sparks. UV-radiation/sunlight. Exposure to air. Static discharge (electrostatic discharge).

**Incompatible materials**

**Incompatible materials** Strong oxidizing agents. Copper.

**Hazardous decomposition products**

**Hazardous decomposition products** Carbon oxides. Formaldehyde.

## 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Information on likely routes of exposure**

**Product Information** No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

**Inhalation** May cause irritation. Harmful if inhaled.

**Eye contact** Causes serious eye irritation.

**Skin contact** Causes skin irritation.

**Ingestion** Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Aspiration may cause pulmonary edema and pneumonitis.

**Symptoms** Irritation. Redness. Swelling of tissue. Aspiration risk: may cause lung damage if swallowed.

**Numerical measures of toxicity - Product Information**

**On basis of test data**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Styrene	>5000 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	= 11.7 mg/L ( Rat ) 4 h

See section 16 for terms and abbreviations

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Skin corrosion/irritation** Irritating to skin.

**Serious eye damage/eye irritation** Causes serious eye irritation.

**Respiratory or skin sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity** Refer to 'Chronic effects' section below.

**Reproductive toxicity** H361d - Suspected of damaging the unborn child.

**STOT - single exposure** No information available.

<b>STOT - repeated exposure</b>	Causes damage to organs through prolonged or repeated exposure.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.
<b>Chronic effects:</b>	There is sufficient evidence in experimental animals for the carcinogenicity of styrene. There is limited evidence in humans for the carcinogenicity of styrene.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Ecotoxicity** Keep out of waterways. Toxic to aquatic organisms.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Styrene	EC50: =1.4mg/L (72h, Pseudokirchneriella subcapitata) EC50: =0.72mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.46 - 4.3mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.15 - 3.2mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 3.24 - 4.99mg/L (96h, Pimephales promelas) LC50: 19.03 - 33.53mg/L (96h, Lepomis macrochirus) LC50: 6.75 - 14.5mg/L (96h, Pimephales promelas) LC50: 58.75 - 95.32mg/L (96h, Poecilia reticulata)	-	EC50: 3.3 - 7.4mg/L (48h, Daphnia magna)

### Persistence and degradability

**Persistence and degradability** Readily biodegradable.

### Bioaccumulative potential

**Bioaccumulation** This chemical shows a low bioaccumulation potential.

Chemical name	Partition coefficient
Styrene	2.95

### Mobility

**Mobility in soil** No information available.

### Other adverse effects

### Endocrine Disruptor Information

Chemical name	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Endocrine disrupting potential
Styrene	Group I Chemical	High Exposure Concern	-

## 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.



**Contaminated packaging**

Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. TRANSPORT INFORMATION****ADG**

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

**UN number** 2055  
**Proper shipping name** STYRENE MONOMER, STABILIZED  
**Hazard class** 3  
**Packing group** III  
**Hazchem code** 3Y

**IATA**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN number** 2055  
**UN proper shipping name** STYRENE MONOMER, STABILIZED  
**Transport hazard class(es)** 3  
**Packing group** III

**IMDG**

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

**UN number** 2055  
**UN proper shipping name** STYRENE MONOMER, STABILIZED  
**Transport hazard class(es)** 3  
**Packing group** III  
**IMDG EMS Fire** F-E  
**IMDG EMS Spill** S-D  
**Marine pollutant** No

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

See section 8 for national exposure control parameters

**Poisons Schedule (SUSMP)** 5

**Major hazard (accident/incident planning) regulation**

Verify that license requirements are met

Liquids that meet the criteria for Class 3 Packing Group II or III 50 000

**National pollutant inventory**

Subject to reporting requirement

Chemical name	National pollutant inventory
Styrene - 100-42-5	10 tonne/yr Threshold category 1

**International Inventories**

**AICS** This material is listed on the Australian Inventory of Industrial Chemicals.

**Legend:**

- Australian Inventory of Industrial Chemicals

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**16. OTHER INFORMATION**

Supplier Safety Data Sheet 10/ 2016

**Reason(s) For Issue:** Reissue of an obsolete SDS

**Issuing Date:** 01-Mar-2021

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

**Revision Note:**

The symbol (\*) in the margin of this SDS indicates that this line has been revised.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

**Key literature references and sources for data used to compile the SDS**

EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australian Industrial Chemicals Introduction Scheme (AICIS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 RTECS (Registry of Toxic Effects of Chemical Substances)  
 World Health Organization

**Disclaimer**

**The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,**

transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

**End of Safety Data Sheet**