

SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

CAS Number: 100-42-5
Product Name: Styrene Monomer, Stabilized
Revision Date: Feb 21, 2018 **Date Printed:** Feb 21, 2018
Version: 2.0 **Supersedes Date:** Oct 23, 2017
Manufacturer's Name: Thames River Chemical Corp.
Address: 5230 Harvester Road Burlington, ON, CA, L7L 4X4
Emergency Phone: CHEMTREC (800) 424-9300
Information Phone Number: 905-681-5353
Fax: 905-681-5377
Product/Recommended Uses: For laboratory or industrial use only.

SECTION 2) HAZARDS IDENTIFICATION

Classification

Chronic aquatic toxicity - Category 3
Eye Irritation - Category 2A
Flammable Liquids - Category 3
Specific Target Organ Toxicity - Repeated Exposure - Category 1
Specific Target Organ Toxicity -Single Exposure (Respiratory Tract Irritation) - Category 3

Pictograms



Signal Word

Danger

Hazard Statements - Health

Causes serious eye irritation
Causes damage to organs through prolonged or repeated exposure.
May cause respiratory irritation

Hazard Statements - Physical

Flammable liquid and vapor

Hazard Statements - Environmental

Harmful to aquatic life with long lasting effects

Precautionary Statements - General

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.

Precautionary Statements - Prevention

Avoid release to the environment.
Wash thoroughly/Wash hands thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.
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 explosion-proof electrical, ventilating, lighting equipment.
Use only non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.

Precautionary Statements - Response

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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
In case of fire: Use carbon dioxide, alcohol foam, water spray or dry chemical to extinguish.
Get Medical advice/attention if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor, if you feel unwell.

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local/national/international regulation. Waste management should be in full compliance with national, regional and local laws.

Physical Hazards Not Otherwise Classified

No Data Available

Health Hazards Not Otherwise Classified

No Data Available

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

Composition Information

Contains inhibitor 4-tert-Butylpyrocatechol (TBC): 10 - 60 ppm. CAS# 98-29-3

CAS	Chemical Name	% By Weight
0000100-42-5	STYRENE	100%

SECTION 4) FIRST-AID MEASURES

Inhalation

Get medical advice/attention if you feel unwell or are concerned. Call a POISON CENTER/doctor. Remove source of exposure or move person to fresh air and keep comfortable for breathing. Eliminate all ignition sources if safe to do so. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

Eye Contact

If eye irritation persists: Get medical advice/attention. If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open.

Skin Contact

Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Store contaminated clothing under water and wash before re-use or discard. Rinse skin with water/shower and mild soap for 5 minutes or until product is removed. Consult a

physician.

Ingestion

Rinse mouth and drink large quantities of water. Do not induce vomiting. Danger of aspiration! Immediately get medical attention. Never give anything by mouth to an unconscious person.

Most Important Symptoms and Effects, Both Acute and Delayed

In case of prolonged exposure: Headache, dizziness, amyosthenia, disorders of coordination, nausea, unconsciousness.
Aspiration of this product into the lungs during vomiting, may cause serious injury or death.

Indication of Any Immediate Medical Attention and Special Treatment Needed

No Data Available

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Small Fire : Dry chemical, foam, carbon dioxide, water-spray or alcohol-resistant foam. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Large Fire: Water spray, fog or alcohol-resistant foam.

Unsuitable Extinguishing Media

Do not use straight stream of water.

Specific Hazards in Case of Fire

Many vapors are heavier than air. Containers may explode in fire. Many liquids are lighter than water. May form an ignitable vapor/air mixture in closed tanks or containers. Runoff to sewer may create fire or explosion hazard. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flashback. Vapors will spread along ground and collect in low or confined areas (sewers, basements, tanks) Polymer: May polymerize explosively when heated or involved in a fire. Fire will produce irritating gases.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Move undamaged containers from immediate hazard area if it can be done safely. Stop spill/release if it can be done safely. Cool containers with flooding quantities of water until well after fire is out. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Product has a low flashpoint: Use of water spray when fighting fire may be inefficient. Nitromethane and nitroethane: Do not use dry chemical extinguishers to control fires. Large Fire: Dike fire-control water for later disposal; do not scatter the material

Special Protective Actions

Wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. DO NOT FIGHT FIRE WHEN FIRE REACHES THE MATERIAL.

Leave the area of fire and let the fire burn out. Remove persons to safety. Cool endangered containers with water spray and, if possible, remove from danger zone. Do not allow water used to extinguish fire to enter drains, ground or waterways. Treat runoff as hazardous.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure

Isolate hazard area and keep unauthorized personnel away. Stay uphill and/or upstream. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Evacuate and isolate hazard area and keep unauthorized personnel away. A vapor-suppressing foam may be used to reduce vapors.

Recommended Equipment

Wear chemical protective clothing and positive pressure self-contained breathing apparatus (SCBA).

Personal Precautions

Avoid breathing vapor or mist. Avoid contact with skin, eye or clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers. Dike far ahead of liquid spill for later disposal.

Methods and Materials for Containment and Cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean, non-sparking tools to collect absorbed material. Ventilate area after clean-up is complete.

SECTION 7) HANDLING AND STORAGE

General

Wash hands after use. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. This product is not intended for human or animal consumption. All containers must be properly labelled.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. Report ventilation failures immediately. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements

Do not store large quantities of flammable liquids in the same storage cabinet. Store in dry, cool areas, out of direct sunlight and away from other sources of heat. Empty containers retain residue and may be dangerous. Keep away from incompatible materials (e.g. oxidizers). Store flammable and combustible liquids in areas that are cool, dry and well ventilated to reduce vapour concentrations. Never use plastic or glass containers for storing flammable liquids. Keep containers securely sealed when not in use. Bond and ground metal containers/cylinders when transferring. Avoid storing in direct sunlight or near other heat sources; eliminate all sources of ignition. Cabinets must be labelled; FLAMMABLE - KEEP FIRE AWAY. Avoid storing in basements. Protect containers against banging or other physical damage when storing, transferring, or using them.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear indirect-vent, impact and splash resistant goggles when working with liquids

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber.

Respiratory Protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 should be followed. Check with respiratory protective equipment suppliers.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	CANsmg	CANspmm	CANtmg	CANtppm	OSHA STEL (mg/m3)	OSHA STEL (ppm)	OSHA TWA (mg/m3)	OSHA TWA (ppm)	OSHA Carcinogen	OSHA Tables (Z1, Z2, Z3)	OSHA Skin designation	ACGIH STEL (mg/m3)
STYRENE	426	100	213	50		600 (a) /5 mins. in any 3 hrs.		100 (a) / 200 ceiling		1,2		170

Chemical Name	ACGIH STEL (ppm)	ACGIH TWA (mg/m3)	ACGIH TWA (ppm)	ACGIH TLV Basis	ACGIH Carcinogen	ACGIH Notations
STYRENE	40	85	20	CNS impair; URT irr; peripheral neuropathy	A4	A4; BEI

(C) - Ceiling limit, A4 - Not Classifiable as a Human Carcinogen, BEI - Substances for which there is a Biological Exposure-Index or Indices, CNS - Central nervous system, impair - Impairment, irr - Irritation, URT - Upper respiratory tract

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	7.56 lb/gal
Specific Gravity	0.91
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Appearance	clear liquid
Odor Description	aromatic
Odor Threshold	N/A
pH	7
Melting Point	-31 °C
Low Boiling Point	145 °C
High Boiling Point	N/A
Flash Point	31 °C
Vapor Pressure	6.7 hPa (68°F)
Vapor Density	3.59 (Air = 1)
Evaporation Rate	No Data Available
Upper Explosion Level	N/A
Lower Explosion Level	N/A
Water Solubility	0.32 g/L (77 °F)
Coefficient Water/Oil	log P(o/w) = 2.96
Viscosity	0.696 mm ² /s (77°F)

SECTION 10) STABILITY AND REACTIVITY

Reactivity

Flammable liquid and vapor. Vapors may form explosive mixtures with air. Not corrosive on metal.

Stability

Stable under normal storage and handling conditions. Maintain inhibitor concentration and dissolved part of oxygen.

Conditions to Avoid

Keep away from heat sources, sparks and open flames. Avoid loss of inhibitor.

Hazardous Reactions/Polymerization

Danger of a spontaneous polymerization in the presence of radical dispensers.

Polymerization with explosive violence. Polymerization may be catalyzed by the absence of air, by metal salts, peroxides and rust.

Polymerisation is strongly exothermic and can lead to violent reactions. Polymerisation in the presence of acids.

Incompatible Materials

Peroxides, oxidizing agents, acids, strong alkalis, metal halogenides, polymer-catalysts, copper including alloys.

Hazardous Decomposition Products

In case of fire, the following may be liberated: Carbon monoxide and carbon dioxide, smoke, black carbon, aromatic hydrocarbons.

SECTION 11) TOXICOLOGICAL INFORMATION

Likely Route of Exposure

Inhalation, ingestion, skin absorption

Acute Toxicity

Aspiration Hazard

No Data Available

Carcinogenicity

No Data Available

Germ Cell Mutagenicity

No Data Available

Reproductive Toxicity

No Data Available

Respiratory/Skin Sensitization

No Data Available

Serious Eye Damage/Irritation

Causes serious eye irritation

Skin Corrosion/Irritation

No Data Available

Specific Target Organ Toxicity - Repeated Exposure

Causes damage to organs through prolonged or repeated exposure.

Specific Target Organ Toxicity - Single Exposure

May cause respiratory irritation

0000100-42-5 STYRENE

LC50 (rat): 5640 ppm (24000 mg/m³) (4-hour exposure; unconfirmed) (1); 2800 ppm (4-hour exposure) (26)

LC50 (mouse): 2230 ppm (9500 mg/m³) (4-hour exposure; unconfirmed) (1); 5000 ppm (2-hour exposure) (26)

LD50 (oral, rat): 5000 mg/kg (2)

LD50 (oral, mouse): 316 mg/kg (unconfirmed) (1)

SECTION 12) ECOLOGICAL INFORMATION

Toxicity

Harmful to aquatic life with long lasting effects

Algae toxicity:

EC50 *Pseudokirchneriella subcapitata* (green algae): 4.9 mg/L/72h.

Daphnia toxicity:

EC50 *Daphnia magna* (Big water flea): 4.7 mg/L/48h.

NOEC *Daphnia magna* (Big water flea): 1.01 mg/L/21d (OECD 211).

Fish toxicity:

LC50 *Pimephales promelas* (fathead minnow): 4.02 mg/L/96h.

Effects on sewage plants:

EC 20 Bacteria in activated sludge: 140 mg/L/30 min (OECD 209).

Terrestrial animals soil:

LC50 *eisenis foetida*: 120 mg/kg/14d (OECD 207).

Mobility in Soil

Adsorption/Desorption soil: Adsorption coefficient (Koc): 352 at 68 °F.

Volatility rate: $H = 232 \text{ Pa} \cdot \text{m}^3/\text{mol}$ at 77 °F. The product is highly volatile.

Bio-accumulative Potential

No Data Available

Persistence and Degradability

Readily biodegradable.

Other Adverse Effects

No Data Available

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with national, provincial and local laws.

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information

UN number: UN2055
Proper shipping name: Styrene monomer, stabilized
Hazard class: 3
Packaging group: III
Hazardous substance (RQ): No Data Available
Toxic-Inhalation Hazard: No Data Available
Marine Pollutant: No Data Available
Note / Special Provision: No Data Available

Transport Canada Information

UN number: UN2055
Proper shipping name: Styrene monomer, stabilized
Hazard class: 3
Packaging group: III
Marine Pollutant: No Data Available
Transport in bulk (according to Annex II of MARPOL 73/78): No Data Available
Note / Special Provision: Note / Special Provision

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0000100-42-5	STYRENE	100%	DSL,TSCA,CA_Prop65 - California Proposition 65,EU_EC_Inventory - EC Inventory

SECTION 16) OTHER INFORMATION

Glossary

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CANsmg or CANspmm - Canadian Short Term Exposure Level in mg/L or in ppm; CANtrmg or CANtppm - Canadian Time Weighted Average in mg/L or in ppm; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center(US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self Contained Breathing Apparatus; STEL-Short Term Exposure Limit; TCEQ Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

Version 2.0:

Revision Date: Jul 05, 2017

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