STYRENE MONOMER 50 PPM
INHIB PL378

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)

Product name STYRENE MONOMER 50 PPM INHIB

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, Extremely penetrating, Colorless to yellowish
WARNING!
Flammable Liquid, Carcinogen, Moderate skin irritant, Moderate eye irritant

Potential Health Effects

Routes of exposure
Inhalation, Skin absorption, Skin contact, Eye contact, Ingestion

Eye contact
Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin contact
Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage., Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

Ingestion
Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful., This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation
Breathing of vapor or mist is possible., Breathing aerosol and/or mist is possible when material is sprayed. Aerosol and mist may present a greater risk of injury because

more material may be present in the air than from vapor alone., Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful., Symptoms usually occur at air concentrations higher than the recommended exposure limits (See Section 8).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material:, respiratory tract, skin, lung (for example, asthma-like conditions), liver, central nervous system, male reproductive system, auditory system

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, metallic taste, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, loss of coordination, confusion, liver damage

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, mild, reversible kidney effects, effects on hearing, respiratory tract damage (nose, throat, and airways), testis damage, liver damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, mild effects on color vision, effects on hearing, respiratory tract damage (nose, throat, and airways), central nervous system effects

Carcinogenicity

There was no increase in cancer in rats exposed to styrene by inhalation. However, there was an increase in lung cancer in styrene-exposed mice. The relevance of the mouse lung cancer to humans is uncertain. Styrene did not cause cancer in mice in studies in which the chemical was placed in the stomachs through a feeding tube, or in a study in which styrene was given by injection. Epidemiological studies do not provide a basis for concluding that styrene causes cancer. Styrene is listed as a carcinogen by the International Agency for Research on Cancer (IARC).

Reproductive hazard

This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these findings to humans is uncertain.

Other information

Styrene readily reacts with low concentrations of halogens (for example, fluorine, chlorine, bromine, or iodine) to forma tear-producing substance.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
STYRENE	100-42-5	-<=100%

4. FIRST AID MEASURES

General Information

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to physician

Hazards: This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media :

dry chemical, carbon dioxide (CO2), foam, water spray

Hazardous combustion products:

May form:, carbon dioxide and carbon monoxide, toxic fumes, various hydrocarbons

Precautions for fire-fighting:

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Polymerization will take place under fire conditions. If polymerization occurs in a closed container, there is a possibility it will rupture violently. Cool storage container with water, if exposed to fire. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77., Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Environmental precautions

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

Methods for cleaning up

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

7. HANDLING AND STORAGE

Handling:

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed., Precautions during use: avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing impervious protective gloves. As with all products of this nature, good personal hygiene is essential. Hands and other exposed areas should be washed thoroughly with soap and water after contact, especially before eating and/or smoking. Regular laundering of contaminated clothing is essential to reduce indirect skin contact with this material. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

Storage:

Store in closed containers in a dry, well-ventilated area., Do not store near extreme heat, open flame, or sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

STYRENE		**100-42-5**
OEL (QUE)	time weighted average	50 ppm
OEL (QUE)	time weighted average	213 mg/m3
OEL (QUE)	Short term exposure limit	100 ppm
OEL (QUE)	Short term exposure limit	426 mg/m3
CAD AB OEL	time weighted average	50 ppm
CAD AB OEL	time weighted average	213 mg/m3
CAD AB OEL	Short term exposure limit	100 ppm
CAD AB OEL	Short term exposure limit	426 mg/m3
CAD BC OEL	time weighted average	50 ppm
CAD BC OEL	Short term exposure limit	75 ppm
CAD ON OEL	time weighted average	50 ppm
CAD ON OEL	time weighted average	213 mg/m3
CAD ON OEL	Short term exposure limit	200 ppm
CAD ON OEL	Short term exposure limit	852 mg/m3

Exposure controls Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s)., OSHA has formally endorsed a styrene industry proposal for a voluntary 50 ppm workplace limit on styrene. Members of theStyrene Information and Research Council (SIRC), Composites Institute (CI), Composite Fabricators Association (CFA), International Cast Polymers Association (ICPA) and National Marine Manufacturers Association (NMMA) have agreed to use either engineering controls, work practices or respiratory protection to achieve this voluntary limit for styrene.

Eye protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and body protection

Wear resistant gloves (consult your safety equipment supplier)., To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

polyvinyl alcohol

Respiratory protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid	
Form	Viscous liquid	
Colour	Colorless to yellowish	
Odour	Extremely penetrating	
Boiling point/range	293.4 °F145 °C	@ 760 mmHg
Melting point/range	-31 °C	@
pH		No data.
Flash point	34.4 °C	Tag closed cup
Evaporation rate	0.49	N-Butyl Acetate
Explosion limits	1.1 %(V)	6.1 %(V)

Vapour pressure	0.853248 kPa	25 °C
Vapour density	3.6	
Density	0.909 g/cm3	60.00 °F
	7.53 lb/gal	@ 25 °C
Solubility	negligible	water
Partition coefficient (n-octanol/water)		No data.
Autoignition temperature		No data.

10. STABILITY AND REACTIVITY

Stability:

This material is unstable at elevated temperatures and pressures.

Conditions to avoid:

Avoid heat, open flame, and prolonged storage at elevated temperatures., Avoid contact with:, excessive heat

Incompatible products:

Avoid contact with:, acids, aluminum chloride, halogens, iron chloride, metal salts, peroxides, strong alkalis, strong oxidizing agents

Hazardous decomposition products:

May form:, carbon dioxide and carbon monoxide, toxic fumes, various hydrocarbons

Hazardous reactions:

Product can undergo hazardous polymerization., Avoid exposure to excessive heat, peroxides and polymerization catalysts.

Thermal decomposition

No data.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

STYRENE	**100-42-5**
LD 50: Rat 2,650 mg/kg	

Acute dermal toxicity

STYRENE	100-42-5

Acute inhalation toxicity

STYRENE	100-42-5
LC 50: Rat 2800 ppm	

12. ECOLOGICAL INFORMATION

No data.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

Dispose of in accordance with all applicable local, state and federal regulations., Do not discharge effluent containing this product into lakes, streams, ponds or estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA., For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution Company, IC&S Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

TDG_ROAD: STYRENE MONOMER, STABILIZED, 3, UN2055, Packing group III
TDG_RAIL: STYRENE MONOMER, STABILIZED, 3, UN2055, Packing group III
TDG_INWTR: STYRENE MONOMER, STABILIZED, 3, UN2055, Packing group III
IMDG: STYRENE MONOMER, STABILIZED, 3, UN2055, Packing group III
IATA_P: Styrene monomer, stabilized, 3, UN2055, Packing group III
IATA_C: Styrene monomer, stabilized, 3, UN2055, Packing group III

15. REGULATORY INFORMATION

Reportable quantity: Not applicable.

WHMIS Classification	**B2**	**Flammable Liquid**
	D2A	**Very Toxic Material Causing Other Toxic Effects**
	D2B	**Toxic Material Causing Other Toxic Effects**
	F	**Dangerously Reactive Material**

Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)
Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Can. Gaz. Part I, 135:12, 940)
Canada. Canadian Environmental Protection Act (CEPA). WHMIS Ingredient Disclosure List (Can. Gaz., Part II, Vol. 122, No. 2)
STYRENE 100-42-5
Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Can. Gaz. Part I, 135:12, 940)
STYRENE 100-42-5
BENZENE 71-43-2

Notification status

Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Switzerland. Consolidated Inventory	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)
Japan. Kashin-Hou Law List	y (positive listing)
Japan. Kashin-Hou Law List	y (positive listing)
US. Toxic Substances Control Act	y (positive listing)
EU. EINECS	y (positive listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)

	Health	Flammability	Reactivity	Other
HMIS	2*	3	2	
NFPA	2	3	2	
NFPA	2	3	2	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.