



## Safety Data Sheet

Authoring date 18-Dec-2014  
Revision date 18-Dec-2014

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

**Product Code** @RCTEST005  
**Product name** Styrene

**Recommended Use** Polymer material(Monomer)

**Manufacturer** DIC Corporation Tokyo Plant, 35-58, Sakashita 3-chome, Itabashi-ku, Tokyo 174-8520, Japan  
TEL:+81-3-5392-2257  
FAX:+81-3-5392-2289

**Supplier / Importer** DIC (Malaysia) Sdn. Bhd.  
Plot 501 & 502, Persiaran Sabak Bernam, Section 26, Kawasan Hicom, 40400 Shah Alam, Selangor Darul Ehsan, Malaysia  
TEL: 03-5191-0033 FAX: 03-5191-7233 Emergency TEL: 03-5191-0033

### 2. HAZARDS IDENTIFICATION

#### GHS - Classification

Flammable Liquids	Category 3 - (H226)
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)

#### Hazard symbols

Xn - Harmful

#### R-code(s)

R10 - Repr. cat. 3; R63 - Xn; R48/20 - Xn; R20 - Xi; R36/38

#### Label elements



#### **SIGNAL WORD**

Danger

#### **Hazard statements**

H226 - Flammable liquid and vapor

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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

**Precautionary Statements**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P281 - Use personal protective equipment as required  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P313 - Get medical advice/attention  
P313 - Get medical advice/attention  
P337 - If eye irritation persists:  
P337 - If eye irritation persists:  
P337 + P313 - If eye irritation persists: Get medical advice/attention  
P370 + P378 - In case of fire: Use dry sodium carbonate to extinguish

**Other hazards****Hazards not otherwise classified (HNOC)****3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical identity  
Pure substance/mixture

No information available  
substance

chemical name	CAS No	EC No	weight-%
Styrene 100-42-5	100-42-5	202-851-5	99<

**4. FIRST AID MEASURES****first aid measures****General advice**

Immediate medical attention is required In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible) If symptoms persist, call a physician

**INHALATION**

Remove to fresh air Call a physician If breathing is irregular or stopped, administer artificial respiration Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation Move to fresh air in case of accidental inhalation of vapors If symptoms persist, call a physician

**Skin Contact**

Wash off immediately with plenty of water Wash contaminated clothing before reuse If skin irritation persists, call a physician Immediate medical attention is not required Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes

**Eye Contact**

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes Keep eye wide open while rinsing If symptoms persist, call a physician

**Ingestion**

Rinse mouth Drink plenty of water If symptoms persist, call a physician Do NOT induce vomiting Clean mouth with water and drink afterwards plenty of water Never give anything by mouth to an unconscious person Call a physician

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

**Symptoms** None known.

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

**Self-protection of the first aider** Remove all sources of ignition Use personal protective equipment as required

**Note to physicians** Treat symptomatically

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## 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

**Suitable extinguishing media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

**Specific hazards arising from the chemical**

Keep product and empty container away from heat and sources of ignition

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## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions**

Remove all sources of ignition Evacuate personnel to safe areas Ensure adequate ventilation, especially in confined areas Use personal protective equipment as required Keep people away from and upwind of spill/leak

**Environmental precautions**

Prevent further leakage or spillage if safe to do so Prevent product from entering drains Do not flush into surface water or sanitary sewer system

**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** Pick up and transfer to properly labeled containers Dam up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust) Soak up with inert absorbent material

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## 7. HANDLING AND STORAGE

**Precautions for safe handling**

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**Advice on safe handling**

Ensure adequate ventilation, especially in confined areas Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity) Take precautionary measures against static discharges Use spark-proof tools and explosion-proof equipment All equipment used when handling the product must be grounded Use with local exhaust ventilation Use personal protective equipment as required Do not breathe dust/fume/gas/mist/vapors/spray

**Conditions for safe storage, including any incompatibilities**  
**Storage Conditions**

Keep tightly closed in a dry and cool place Keep in properly labeled containers Keep containers tightly closed in a cool, well-ventilated place No information available

**Prevents Handling of Incompatible Substances or Mixtures****8. exposure controls/personal protection****Control parameters**

chemical name	Malaysia	Japan
Styrene 100-42-5	TWA: 20 ppm TWA: 85.2 mg/m <sup>3</sup> Skin	TWA: 20 ppm TWA: 85 mg/m <sup>3</sup> Skin ISHL/ACL: 20 ppm

chemical name	ACGIH	OSHA PEL	NIOSH IDLH
Styrene 100-42-5	STEL: 40 ppm TWA: 20 ppm	TWA: 100 ppm (vacated) TWA: 50 ppm (vacated) TWA: 215 mg/m <sup>3</sup> (vacated) STEL: 100 ppm (vacated) STEL: 425 mg/m <sup>3</sup> Ceiling: 200 ppm	IDLH: 700 ppm TWA: 50 ppm TWA: 215 mg/m <sup>3</sup> STEL: 100 ppm STEL: 425 mg/m <sup>3</sup>

**Engineering controls**

Ensure adequate ventilation, especially in confined areas

**Personal protective equipment (PPE)**

Hand protection

Gloves made of plastic or rubber

**Eye/face protection**

Tight sealing safety goggles Face protection shield

**Skin and body protection**

Antistatic footwear Wear fire/flame resistant/retardant clothing Gloves made of plastic or rubber Suitable protective clothing Apron

**9. Physical and Chemical Properties**

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**Physical state**

Physical state	Liquid
Appearance	No data available
color	Colorless
Odor	No data available
Odor Threshold	No data available
pH	
Melting point / melting range	-23 °F / -31 °C
Boiling point/boiling range	No data available
flash point	88 °F / 31 °C
Method	
evaporation rate	No data available
Flammability (solid, gas)	No data available
explosive limits	
Explosive upper limit	
Explosive lower limit	
Vapor pressure @20°C (kPa)	0.67
vapor density	3.6 (Air:1)
density	No data available
Partition coefficient	No data available
Solubility(ies)	No data available
Autoignition Temperature	914 °F / 490 °C
Decomposition temperature	No data available
Dynamic viscosity	No data available

**10. Stability and Reactivity****Reactivity****Stability**

Stable under normal conditions

**Possibility of hazardous reactions**

None under normal processing

**Conditions to avoid**

Heat, flames and sparks

**Incompatible materials****Hazardous decomposition products**

None under normal use conditions

**11. Toxicological Information****Information on likely routes of exposure**

INHALATION	No data available
Eye Contact	No data available
Skin Contact	No data available
Ingestion	Ingestion may cause irritation to mucous membranes

**Information on toxicological effects****acute toxicity**

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chemical name	Oral LD50	dermal LD50	Inhalation LC50
Styrene	= 1000 mg/kg ( Rat )		= 11.7 mg/L ( Rat ) 4 h

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

skin corrosion/irritation	No data available
Serious eye damage/eye irritation	No data available
sensitization	No data available
germ cell mutagenicity	No data available
carcinogenicity	No data available

chemical name	IARC
Styrene	Group 2B

*IARC (International Agency for Research on Cancer)**Group 2B - Possibly Carcinogenic to Humans.*

Reproductive Toxicity	No data available
STOT - single exposure	No data available
STOT - repeated exposure	No data available
chronic toxicity	Avoid repeated exposure May cause adverse liver effects Contains a known or suspected reproductive toxin
aspiration hazard	No data available

**Numerical measures of toxicity****Unknown Acute Toxicity** 0% of the mixture consists of ingredient(s) of unknown toxicity.**The following values are calculated based on chapter 3.1 of the GHS document****ATEmix (inhalation-dust/mist)** 1.50 mg/l**12. Ecological Information**

100% of the mixture consists of component(s) of unknown hazards to the aquatic environment

chemical name	Algae/aquatic plants	Fish	Crustacea	Terrestrial organism
Styrene	1.4: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 0.72: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 0.46 - 4.3: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static 0.15 - 3.2: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50 static	3.24 - 4.99: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 19.03 - 33.53: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 6.75 - 14.5: 96 h <i>Pimephales promelas</i> mg/L LC50 static 58.75 - 95.32: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	3.3 - 7.4: 48 h <i>Daphnia magna</i> mg/L EC50	120 mg/kg LC50 <i>Eisenia foetida</i> 14 Days soil dry weight

**Persistence and degradability**

No data available

**Bioaccumulation**

No data available

**Mobility**

No data available

**Other adverse effects**

No data available

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### 13. Disposal Considerations

**Waste from Residues / Unused Products**

Disposal should be in accordance with applicable regional, national and local laws and regulations Destroy by fire. This product can be recycled.

### 14. Transport Information

**IMDG**

Proper shipping name	Styrene monomer, stabilized
Hazard Class	3
UN/ID no	UN2055
Packing group	III
EmS-No	F-E, S-D
Special Provisions	none
Marine pollutant	Not Applicable
Environmental hazard	Not Applicable
Description	UN2055 Styrene monomer, stabilized , 3, III

**RID**

UN/ID no	UN2055
Proper shipping name	Styrene monomer, stabilized
Hazard Class	3
Packing group	III
Environmental hazard	Not Applicable
Classification code	F1
Special Provisions	none
Description	UN2055 Styrene monomer, stabilized , 3, III

**ADR**

UN/ID no	UN2055
Proper shipping name	Styrene monomer, stabilized
Hazard Class	3
Packing group	III
Environmental hazard	Not Applicable
Special Provisions	none
Classification code	F1
Tunnel restriction code	(D/E)
Description	UN2055 Styrene monomer, stabilized , 3, III, (D/E)

**IATA**

UN/ID no	UN2055
Proper shipping name	Styrene monomer, stabilized
Hazard Class	3
Packing group	III
ERG Code	3L
Special Provisions	none
Description	UN2055 Styrene monomer, stabilized , 3, III

### 15. regulatory information

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**National regulations**

<b>Factories and Machinery Act</b>	Applicable
<b>Occupational Safety and Health Act</b>	Applicable
<b>Poison Act</b>	Not Applicable
<b>Food Act</b>	Not Applicable
<b>Environment Quality Act</b>	Not Applicable
<b>Environmentally Hazardous Substances(EHS) Notification and Registration</b>	Applicable

**International Inventories**

**All of the components in the product are on the following Inventory lists**

TSCA (United States): Canada (DSL/NDL) Europe (EINECS/ELINCS/NLP) Australia (AICS) South Korea (KECL): China (IECSC) ENCS (Japan): Philippines (PICCS)

This product contains a substance not listed on international inventories - it is for research and development use only

<b>TSCA</b>	All ingredients of this product are registered on TSCA inventory.
<b>DSL</b>	Complies
<b>EINECS/ELINCS</b>	Complies
<b>PICCS</b>	Complies
<b>ENCS</b>	Complies
<b>IECSC</b>	Complies
<b>AICS</b>	Complies
<b>KECL</b>	Complies

**Legend**

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

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**16. other information**

**Authoring date** 18-Dec-2014

**Revision Note****Reference**

LOLI Database (ChemADVISOR,Inc.)

**The reference on GHS classification results**

EU CLP(1272/2008)Annex VI Table 3.1

**Other information**

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