

## Safety data sheet according to 1907/2006/EC, Article 31

Printing date 18.10.2016

Revision: 18.10.2016

Trade name: Styrene

### SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

Trade name: Styrene

CAS Number: 100-42-5

EC number: 202-851-5

Index number: 601-026-00-0

Registration number: 01-2119457861-32-0081

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Application of the substance / the preparation: Monomer for the preparation of Copolymers.

#### 1.3. Details of the supplier of the safety data sheet:

##### Manufacturer/Supplier:

The Kuwait Styrene Company (TKSC)

P.O. Box 9717, Ahmadi 61008, Kuwait

Tel: +965 25765708 / 5733

Email: SMMARKET@equate.com

#### 1.4. Emergency telephone number: (965) 2325 2545 or 2325 2535

### SECTION 2 - HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

.....



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation

##### Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn ; Harmful

R20: Harmful by inhalation.

.....



Xi ; Irritant

R36/38: Irritating to eyes and skin.

.....

R10: Flammable.

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## 2.2. Label elements

### Labelling according to Regulation (EC) No 1272/2008:

The substance is classified and labelled according to the CLP regulation.

### Hazard pictograms:



GHS02

GHS07

**Signal word:** Warning

### Hazard statements:

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

### Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## 2.3. Other hazards: .

### Results of PBT and vPvB assessment .

**PBT:** Not applicable. .

**vPvB:** Not applicable

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Chemical characterization (Substances)

#### CAS No. Description

100-42-5 styrene

#### Identification number(s)

**EC number:** 202-851-5

**Index number:** 601-026-00-0

**Additional information:** This product may include 4-tert-butylcatechol (CAS 98-29-3) < 150ppm

## SECTION 4 - FIRST AID MEASURES

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## 4.1. Description of first aid measures

### General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

### After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. In case of unconsciousness place patient stably in side position for transportation.

### After skin contact:

Immediately wash with water and soap and rinse thoroughly. If skin irritation continues, consult a doctor.

### After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor. Remove contact lenses.

**After swallowing:** Call for a doctor immediately.

## 4.2. Most important symptoms and effects, both acute and delayed:

No further relevant information available.

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

No further relevant information available.

## SECTION 5 - FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**For safety reasons unsuitable extinguishing agents:** Water with full jet

### 5.2 Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Carbon monoxide (CO)

Carbon dioxide (CO<sub>2</sub>)

Organic compounds

### 5.3 Advice for firefighters

#### Protective equipment:

Wear fully protective suit.

Mouth respiratory protective device.

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

**6.2 Environmental precautions** Do not allow to enter sewers/ surface or ground water.

### 6.3 Methods and material for containment and cleaning up

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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## 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## SECTION 7 - HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

### Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

### 7.2 Conditions for safe storage, including any incompatibilities

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep container tightly sealed.

**7.3 Specific end use(s):** No further relevant information available.

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

**Additional information about design of technical facilities:** No further data; see item 7.

### 8.1 Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

#### 100-42-5 Styrene

WEL	Short-term value: 1080 mg/m <sup>3</sup> , 250 ppm Long-term value: 430 mg/m <sup>3</sup> , 100 ppm
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**Additional information:** The lists valid during the making were used as basis.

### 8.2 Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

#### Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

#### Protection of hands:



Protective gloves

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Revision: 18.10.2016

## Trade name: Styrene

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

### Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

### Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

### Eye protection:



Tightly sealed goggles

**Body protection:** Protective work clothing

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

#### General Information

##### Appearance:

**Form:** Liquid

**Colour:** Clear

**Odour:** Sweetish

**Odour threshold:** Not determined.

**pH-value:** neutral

**Melting point/Melting range:** -30.7°C

**Boiling point/Boiling range:** 145.2°C

**Flash point:** 31°C

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:** 480°C

**Decomposition temperature:** Not determined.

**Self-igniting:** Not determined.

**Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

##### Explosion limits:

**Lower:** 1.2 Vol %

**Upper:** 8.9 Vol %

**Vapour pressure at 20°C:** 6 hPa

**Density at 20°C:** 0.906 g/cm<sup>3</sup>

**Relative density** Not determined.

**Vapour density** Not determined.

**Evaporation rate** Not determined.

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## Solubility in / Miscibility with

**water at 20°C:** 0.24 g/l  
Slightly soluble

**Partition coefficient (n-octanol/water):** Not determined.

## Viscosity:

**Dynamic:** 0.73 mPas

**Kinematic:** Not determined.

**9.2 Other information** No further relevant information available.

## SECTION 10 - STABILITY AND REACTIVITY

**10.1. Reactivity** No data available.

**10.2. Chemical stability:** Stable at recommended- storage (→ see item 7) / stable at room T° .

### Thermal decomposition / conditions to be avoided:

Prolonged temperature above 250°C

Light

**10.3. Possibility of hazardous reactions:** No dangerous reactions known.

**10.4 Conditions to avoid** No further relevant information available.

### 10.5 Incompatible materials

Oxygen, strong oxidizing agents, strong acids, strong alkalis, peroxides, halogens, and any other chemicals;  
Corrosive to copper and its alloys.

### 10.6 Hazardous decomposition products

Carbon monoxide and carbon dioxide

Hydrocarbons

## SECTION 11 - TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

#### LD/LC50 values relevant for classification:

#### 100-42-5 Styrene

Oral	LD50	5000 mg/kg (rat)
Inhalative	LC50/4 h	24 mg/l (rat)

#### Primary irritant effect:

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

#### Additional toxicological information:

May cross the placenta. Alcohol may enhance the toxic effects. This Styrene Monomer contains very low concentrations of 4-T-BUTYL CATECHOL (TBC). TBC is a polymerization inhibitor. For further information on TBC general toxicity, refer to TBC MSDS sheet.

## SECTION 12 - ECOLOGICAL INFORMATION

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## 12.1 Toxicity

**Aquatic toxicity:** No further relevant information available.

**12.2 Persistence and degradability** No further relevant information available.

**12.3 Bioaccumulative potential** No further relevant information available.

**12.4 Mobility in soil** No further relevant information available.

## Additional ecological information

### General notes:

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water.

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

## 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**12.6 Other adverse effects** No further relevant information available.

## SECTION 13 - DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Recommendation:

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**Recommendation:** Disposal must be made according to official regulations.

## SECTION 14 - TRANSPORT INFORMATION

### 14.1 UN Number

ADR, IMDG, IATA

UN2055

### 14.2 UN proper shipping name

ADR

2055 STYRENE MONOMER, STABILIZED

IMDG, IATA

STYRENE MONOMER, STABILIZED

### 14.3 Transport hazard class(es)

ADR



Class

3 Flammable liquids

Label

3

### IMDG, IATA



Class

3 Flammable liquids

Label

3

### 14.4 Packing group

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<b>ADR, IMDG, IATA</b>	III
<b>14.5 Environmental hazards</b>	
<b>Marine pollutant:</b>	No
<b>14.6 Special precautions for user</b>	Warning: Flammable liquids.
<b>Danger code (Kemler):</b>	39
<b>EMS Number:</b>	F-E,S-D
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.

**Transport/Additional information:**

<b>ADR</b>	
<b>Tunnel restriction code:</b>	D/E
<b>UN "Model Regulation":</b>	UN2055, STYRENE MONOMER, STABILIZED, 3, III

## SECTION 15 - REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture.

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.2 Chemical safety assessment** A Chemical Safety Assessment has been carried out.

## 16 - OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

### Recommended restriction of use

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### Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods



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IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent