SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 07/13/2007
Print Date 11/07/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Styrene
Product Number: S4972
Brand: Sigma-Aldrich
Company: Sigma-Aldrich
3530 Spruce Street
SAINT LOUIS MO 63113
USA
Telephone: +1 800-325-5632
Fax: +1 600-325-2252
Emergency Phone #: (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Phenylethylene, Vinylbenzene
Formula: C8H8
Molecular Weight: 104.15 g/mol

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-42-5</td>
<td>202-851-5</td>
<td>601-026-00-0</td>
<td>-</td>
</tr>
</tbody>
</table>

3. HAZARDS OVERVIEW

Emergency Overview
OSHA Hazards
- Flammable Liquid
- Irritant
Carcinogen
Target Organs
- Central nervous system, Blood, Lymphatic system., Endocrine system.

HMIS Classification
- Health Hazard: 2
- Chronic Health Hazard: *
- Flammability: 3
- Physical hazards: 0

NFPA Rating
- Health Hazard: 2
- Fire: 3
- Reactivity Hazard: 0

4. FIRST AID MEASURES

Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
Skin: May be harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Ingestion: May be harmful if swallowed.

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If Inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties
- Flash point: 32.0 °C (89.6 °F) - closed cup
- Ignition temperature: 480 °C (896 °F)

Suitable extinguishing media
For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Specific hazards
Container explosion may occur under fire conditions. Vapours may form explosive mixture with air.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

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Delivery 0827268616-000010  Purchase Order CC1197079KRAHN

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Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Storage**
Keep container tightly closed in a dry and well-ventilated place. Store in cool place.
Light sensitive.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>Components with workplace control parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Components</strong></td>
</tr>
<tr>
<td>Styrene</td>
</tr>
<tr>
<td>STEL</td>
</tr>
<tr>
<td>TWA</td>
</tr>
</tbody>
</table>

**Remarks**
See Table Z-2.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
- Form: liquid, clear
- Colour: colourless

**Safety data**
- pH: no data available
- Melting point: -31.0 °C (23.8 °F)
- Boiling point: 145.0 - 146.0 °C (293.0 - 294.8 °F)
- Flash point: 22.0 °C (69.8 °F) - closed cup
- Ignition temperature: 489 °C (906 °F)
- Lower explosion limit: 1.1 % (V)
- Upper explosion limit: 8.9 % (V)

**Personal protective equipment**

**Respiratory protection**
Where risk assessment shows air-purifying respirators are appropriate use a full face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CE (EU).

**Hand protection**
Handle with gloves.

**Eye protection**
Safety glasses

**Skin and body protection**
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Hygiene measures**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
**10. STABILITY AND REACTIVITY**

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Heat, flames and sparks.
May polymerize on exposure to light.

Materials to avoid
Oxidizing agents, Copper

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity**

LD50 Oral - rat - 2,650 mg/kg
Remarks: Behavioral, Somnolence (general decreased activity), Liver: Other changes.

LC50 Inhalation - rat - 4 h - 12,000 mg/m3

**Irritation and corrosion**

Skin - rabbit - Skin irritation
Eyes - rabbit - Eye irritation - 24 h

**Sensitisation**

no data available

**Chronic exposure**

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

Laboratory experiments have shown mutagenic effects.

**Signs and Symptoms of Exposure**

Dermatitis, Central nervous system depression, Nausea, Dizziness, Headache

**Potential Health Effects**

**Inhalation**
May be harmful if inhaled. May cause respiratory tract irritation.

**Skin**
May be harmful if absorbed through skin. May cause skin irritation.

**Eyes**
May cause eye irritation.

**Ingestion**
May be harmful if swallowed.

**Target Organs**
Central nervous system, Blood, Lymphatic system, Endocrine system.

**12. ECOLOGICAL INFORMATION**

**Elimination information (persistence and degradability)**

**13. DISPOSAL CONSIDERATIONS**

Product
Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging
Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN Number: 2055 Class: 3
Packing group: III
Proper shipping name: Styrene monomer, stabilized

**IMDG**

UN Number: 2055 Class: 3
Packing group: III
EMS No: F-E, S-D
Proper shipping name: STYRENE MONOMER, STABILIZED
Marine pollutant: No

**IATA**

UN Number: 2055 Class: 3
Packing group: III
Proper shipping name: Styrene monomer, stabilized

**15. REGULATORY INFORMATION**

**OSHA Hazards**
Flammable Liquid, Irritant, Carcinogen

**TSCA Status**
On TSCA Inventory

**DSL Status**
All components of this product are on the Canadian DSL list.

**SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
### SARA 313 Components

<table>
<thead>
<tr>
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### SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

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### Pennsylvania Right To Know Components

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### New Jersey Right To Know Components

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### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

### 16. OTHER INFORMATION

**Further information**

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