

MATERIAL SAFETY DATA SHEET

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Version 1.2

Section 1 - Product and Company Information

Product Name 4-METHYLSTYRENE, 96%
Product Number M80806
Brand ALDRICH

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS MO 63103 US
Technical Phone: 314 771 5765
Emergency Phone: 414 273 3850 Ext. 5996
Fax: 800 325 5052

Section 2 - Composition/Information on Ingredient

| Substance Name | CAS # | SARA 313 |
|----------------------|----------|----------|
| 4-METHYLSTYRENE, 96% | 622-97-9 | No |

Formula C9H10
Synonyms Benzene, 1-ethenyl-4-methyl- (9CI) *
1-Ethenyl-4-methylbenzene * p-Methylstyrene *
4-Methylstyrene * 1-Methyl-4-vinylbenzene *
1-p-Tolylethene * p-Vinyltoluene * 4-Vinyltoluene
RTECS Number: WL5076000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Combustible (USA) Flammable (EU). Harmful.
Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, do not induce vomiting; call a physician immediately.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back.

FLASH POINT

114.8 °F 46 °C Method: closed cup

EXPLOSION LIMITS

Lower: 1.1 % Upper: 5.3 %

AUTOIGNITION TEMP

515 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam. Water spray.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions. Combustible liquid. Vapor may travel considerable distance to source of ignition and flash back.

EXPOSURE HAZARD(S)

Material: Irritant. Harmful liquid and fumes.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat and open flame.
Store at 2-8°C

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

| | | |
|-----------------------|--|----------------------------|
| Appearance | Color: Colorless Form: Clear liquid | |
| Property | Value | At Temperature or Pressure |
| Molecular Weight | 118.18 AMU | |
| pH | N/A | |
| BP/BP Range | 60 °C | 12 mmHg |
| MP/MP Range | N/A | |
| Freezing Point | N/A | |
| Vapor Pressure | N/A | |
| Vapor Density | N/A | |
| Saturated Vapor Conc. | N/A | |
| SG/Density | 0.895 g/cm ³ | |
| Bulk Density | N/A | |
| Odor Threshold | N/A | |
| Volatile% | N/A | |
| VOC Content | N/A | |
| Water Content | N/A | |
| Solvent Content | N/A | |
| Evaporation Rate | N/A | |
| Viscosity | N/A | |
| Surface Tension | N/A | |
| Partition Coefficient | N/A | |
| Decomposition Temp. | N/A | |
| Flash Point | 114.8 °F 46 °C | Method: closed cup |
| Explosion Limits | Lower: 1.1 % Upper: 5.3 % | |
| Flammability | N/A | |
| Autoignition Temp | 515 °C | |
| Refractive Index | 1.542 | |
| Optical Rotation | N/A | |
| Miscellaneous Data | N/A | |
| Solubility | N/A | |

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Materials to Avoid: Strong oxidizing agents, Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Inhalation: May be harmful if inhaled.

Ingestion: Harmful if swallowed.

Multiple Routes: Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

2255 mg/kg

LD50

Remarks: Behavioral:Tremor. Lungs, Thorax, or Respiration:Respiratory depression. Gastrointestinal:Other changes.

Intraperitoneal

Rat

2324 MG/KG

LD50

Remarks: Behavioral:Tremor. Lungs, Thorax, or Respiration:Respiratory depression. Gastrointestinal:Other changes.

Oral

Mouse

1072 mg/kg

LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory depression.

Intraperitoneal

Mouse

581 MG/KG

LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Respiratory depression.

Intravenous

Mouse

280 MG/KG

LD50

Remarks: Behavioral:Tremor. Lungs, Thorax, or Respiration:Respiratory depression. Gastrointestinal:Other changes.

Oral

Dog

> 5000 mg/kg

LD50

Remarks: Gastrointestinal:Nausea or vomiting. Gastrointestinal:Changes in structure or function of salivary glands. Behavioral:Tremor.

Skin

Rabbit

>5 ML/KG

LD50

Remarks: Skin and Appendages:Skin: After systemic exposure:
Dermatitis, other

IARC CARCINOGEN LIST

Rating: Group 3

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 330 UMOL/L
Cell Type: lymphocyte
Mutation test: Cytogenetic analysis

Species: Human
Dose: 330 UMOL/L
Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Section 12 - Ecological Information

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

IATA

Proper Shipping Name: Vinyltoluenes, stabilized
IATA UN Number: 2618
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 10 36/37/38 65
Risk Statements: Flammable. Irritating to eyes, respiratory system and skin. Harmful: may cause lung damage if swallowed.
S: 26 36 62
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Combustible (USA) Flammable (EU). Harmful.
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.
Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: Yes

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.