



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 07/01/2005
Date Updated: 04/04/2004
Version 1.60

Section 1 - Product and Company Information

Product Name p-Xylene, CHROMASOLV^{AR174}, for HPLC, ≥99%
Product Number 317195
Brand Aldrich Chemical
Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
Fax: 800 325 5052
Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

| Substance Name | CAS # | SARA 313 | EC no | Annex I Index Number |
|----------------|----------|----------|-----------|----------------------|
| P-XYLENE | 106-42-3 | Yes | 203-396-5 | 601-022-00-9 |

Formula C8H10
Synonyms Chromar, p-Dimethylbenzene, 1,4-Dimethylbenzene, p-Methyltoluene, Scintillar, 1,4-Xylene, p-Xylene (ACGIH:OSHA), P-Xylol

Section 3 - Hazards Identification

Emergency Overview

Flammable. Irritant.
Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes, respiratory system and skin.
Readily absorbed through skin. Target organ(s): Nerves. Liver. Kidneys.

HMIS Rating
Health: 2* Flammability: 3 Reactivity: 0

NFPA Rating
Health: 2 Flammability: 3 Reactivity: 0

*additional chronic hazards present.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

14

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Flammable Hazards: Yes

Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.
Forms explosive mixtures in air.

Flash Point: 77 °F 25 °C

Explosion Limits: Lower: 1.1 % Upper: 7 %

Autoignition Temp: 529 °C **Flammability:** Yes

Extinguishing Media

Suitable

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

Unsuitable

Water may be effective for cooling, but may not effect extinguishment.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure to be Followed In Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

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, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

RECEIVED

JUL 11 2005

Safety and Environmental
Health

Aldrich Chemical - 317195

Page 2

Sigma-Aldrich Corporation
www.sigma-aldrich.com

Storage**Suitable**

Keep container closed. Keep away from heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE**Engineering Controls**

Safety shower and eye bath. Use nonsparking tools. 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.

Exposure Limits

| Country | Type | Value |
|---------|-------|-----------------------|
| Poland | NDS | 100 mg/m ³ |
| Poland | NDSch | 350 mg/m ³ |
| Poland | NDSP | |

Exposure Limits, RTECS

| Country | Source | Type | Value |
|---------|-------------------|---------|---|
| USA | ACGIH | STEL | 150 PPM |
| USA | ACGIH | TWA | 100 PPM |
| USA | MSHA Standard-air | TWA | 100 PPM (440 MG/M3) (SKIN) 8H TWA 100 PPM (435 MG/M3) |
| USA | OSHA | PEL | 100 PPM 150 PPM |
| USA | NIOSH | TWASTEL | |

Section 9 - Physical/Chemical Properties**Appearance**

| Physical State | Color |
|----------------|-----------|
| Clear liquid | Colorless |

Molecular Weight: 106.17 AMU

| | | |
|-----------------------|-------------------------|-------|
| pH | N/A | |
| BP/BP Range | 137 - 138 °C | |
| MP/MP Range | 13 °C | |
| Freezing Point | N/A | |
| Vapor Pressure | 9 mmHg | 20 °C |
| Vapor Density | 3.7 g/l | |
| Saturated Vapor Conc. | N/A | |
| SG/Density | 0.861 g/cm ³ | |
| Bulk Density | N/A | |
| Odor Threshold | 0.05 ppm | |
| Volatile% | N/A | |
| VOC Content | N/A | |
| Water Content | N/A | |
| Solvent Content | N/A | |

Aldrich Chemical - 317195

Page 3

Sigma-Aldrich Corporation

www.sigma-aldrich.com

| | | |
|-----------------------|----------------------------|-------|
| Evaporation Rate | N/A | |
| Viscosity | N/A | |
| Surface Tension | 28.3 mN/m | 20 °C |
| Partition Coefficient | Log Kow: 3.15 | |
| Decomposition Temp. | N/A | |
| Flash Point °F | 77 °F | |
| Flash Point °C | 25 °C | |
| Explosion Limits | Lower: 1.1 % Upper: 7 % | |
| Flammability | N/A | |
| Autoignition Temp | 529 °C | |
| Refractive Index | 1.495 | |
| Solubility | | |
| Solubility in Water: | 0.2 mg/ml H ₂ O | |

N/A = not available

Section 10 - Stability and Reactivity**Stability**

Stable

Stable

Materials to Avoid

Strong oxidizing agents.

Hazardous Decomposition Products**Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide.

Hazardous Polymerization**Hazardous Polymerization**

Will not occur.

Section 11 - Toxicological Information**Route of Exposure****Skin Contact**

Causes skin irritation.

Skin Absorption

Harmful if absorbed through skin.

Eye Contact

Causes eye irritation.

Inhalation

Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion

Harmful if swallowed.

Target Organ(s) or System(s)

Nerves. Liver. Kidneys.

Signs and Symptoms of Exposure

Exposure can cause: Narcotic effect. Lung irritation, chest pain, and edema which may be fatal. CNS depression. Gastrointestinal disturbances. Damage to the liver. Damage to the kidneys. Blood effects.

RTECS Number: ZE2625000

Toxicity Data

Oral - Rat: 5000 mg/kg (LD50)

Inhalation - Rat: 4,550 ppm (LC50)

Remarks: Lungs, Thorax, or Respiration: Chronic pulmonary edema.

Liver: Other changes.

Blood: Changes in cell count (unspecified).

Aldrich Chemical - 317195

Page 4

Sigma-Aldrich Corporation

www.sigma-aldrich.com

Intraperitoneal - Rat: 3810 MG/KG (LD50)
Remarks: Lungs, Thorax, or Respiration: Chronic pulmonary edema.
Liver: Other changes.
Blood: Changes in cell count (unspecified).
Intraperitoneal - Mouse: 2450 UL/KG (LD50)

IARC Carcinogen List

Rating
Group 3

ACGIH Carcinogen List

Rating
A4

Chronic Exposure - Teratogen

| Species | Dose | Route of Application | Exposure Time |
|---|----------------|----------------------|---------------|
| Rat | 3000 MG/M3/24H | Inhalation | (9-10D PREG) |
| Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Maternal Effects: Other effects. Endocrine: Estrogenic. | | | |
| Rat | 150 MG/M3/24H | Inhalation | (7-14D PREG) |
| Result: Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Specific Developmental Abnormalities: Musculoskeletal system. | | | |
| Mouse | 12 MG/KG | Oral | (12-15D PREG) |
| Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue). | | | |
| Mouse | 500 MG/M3/12H | Inhalation | (6-15D PREG) |
| Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system. | | | |

Chronic Exposure - Reproductive Hazard

| Species | Dose | Route of Application | Exposure Time |
|--|----------------|----------------------|---------------|
| Result: May cause reproductive disorders. | | | |
| Rat | 3000 MG/M3/24H | Inhalation | (7-14D PREG) |
| Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). | | | |
| Rat | 7 GM/M3 | Inhalation | (7-16D PREG) |
| Result: Maternal Effects: Other effects. | | | |
| Rabbit | 1 GM/M3/24H | Inhalation | (7-20D PREG) |
| Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Abortion, Effects on Embryo or Fetus: Fetal death. | | | |

Section 12 - Ecological Information

Physical Properties Affecting Ecotoxicity

BOD: BOD after 5 Days:
44 %

Acute Ecotoxicity Tests

Test Type
EC50 Algae
Species
Selenastrum capricornutum resp.
Time: Value:
72.0 h 3.2 - 4.4 mg/l
Test Type
EC50 Daphnia
Species
Daphnia magna
Time: Value:
48.0 h 35.5 - 63.1 mg/l

Sigma-Aldrich Corporation
www.sigma-aldrich.com

Test Type

LC50 Fish

Species

Onchorhynchus mykiss (Rainbow trout)

Time: Value:
96.0 h 2.6 mg/l

Test Type

LC50 Fish

Species

Carassius auratus (Goldfish)

Time: Value:
24.0 h 18 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
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.

Section 14 - Transport Information

DOT

Proper Shipping Name: Xylenes
UN#: 1307
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Xylenes
IATA UN Number: 1307
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xn
Indication of Danger
Harmful.
Risk Statements R: 10 20/21 38
Flammable. Harmful by inhalation and in contact with skin. Irritating to skin.
Safety Statements S: 25
Avoid contact with eyes.

US Classification and Label Text

Indication of Danger
Flammable. Irritant.
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.
US Statements
Readily absorbed through skin. Target organ(s): Nerves. Liver. Kidneys.

United States Regulatory Information

SARA Listed: Yes

Sigma-Aldrich Corporation
www.sigma-aldrich.com

Deminimis: 1 %

Notes: This product is subject to SARA section 313 reporting requirements.

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: Yes

NDSL: No

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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.