

Chemical Safety Data Sheet MSDS / SDS

p-xylene SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: p-xylene

CAS: 106-42-3

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**

Flammable liquids, Category 3

Acute toxicity - Category 4, Dermal

Skin irritation, Category 2
Acute toxicity - Category 4, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour

H312 Harmful in contact with skin

H315 Causes skin irritation

H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

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

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264 Wash ... thoroughly after handling.

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

P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

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

P317 Get medical help.

P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P332+P317 If skin irritation occurs: Get medical help.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**Substance**

Chemical name: p-xylene

Common names and synonyms: p-xylene

CAS number: 106-42-3

EC number: 203-396-5

Concentration: 100%

SECTION 4: First aid measures**Description of necessary first-aid measures****If inhaled**

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Vapors cause headache and dizziness. Liquid irritates eyes and skin. If taken into lungs, causes severe coughing, distress, and rapidly developing pulmonary edema. If ingested, causes nausea, vomiting, cramps, headache, and coma. Can be fatal. Kidney and liver damage can occur. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Immediate First Aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Aromatic hydrocarbons and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Specific hazards arising from the chemical

Behavior in Fire: Vapor is heavier than air and may travel considerable distance to a source of ignition and flash back. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in

sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 27°C use a closed system, ventilation and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding). Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants and strong acids. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 100 ppm as TWA; 150 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued. MAK: 440 mg/m³, 100 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: D. EU-OEL: 221 mg/m³, 50 ppm as TWA; 442 mg/m³, 100 ppm as STEL; (skin)

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid.
Colour:	Colourless.
Odour:	Sweet
Melting point/freezing point:	-47.8 °C. Atm. press.: 1 013 hPa.

Boiling point or initial boiling point and boiling range:	Ca. 139.1 °C. Atm. press.:1 013 hPa.
Flammability:	Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.
Lower and upper explosion limit/flammability limit:	% by vol: lower 1.1; upper 7.0
Flash point:	27 °C. Atm. press.:1 013 hPa.
Auto-ignition temperature:	527 °C. Atm. press.:1 013 hPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	dynamic viscosity (in mPa s) = 0.581. Temperature:25.0°C.
Solubility:	Insoluble in water
Partition coefficient n-octanol/water:	log Pow = 3.2. Temperature:20 °C. Remarks:Temperature and pH not stated so assumed standard.
Vapour pressure:	0.207 PSI. Temperature:85 °F.
Density and/or relative density:	0.86. Temperature:25 °C.
Relative vapour density:	3.7 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Reacts with strong acids and strong oxidants.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

As a result of flow, agitation, etc., electrostatic charges can be generated. P-XYLENE may react with oxidizing materials. (NTP, 1992). Acetic acid forms explosive mixtures with p-xylene and air (Shraer, B.I. 1970. Khim. Prom. 46(10):747-750.).

Conditions to avoid

no data available

Incompatible materials

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information**Acute toxicity**

Oral: LD50 - rat (male) - 3 523 mg/kg bw.

Inhalation: LC50 - rat (male/female) - 6 247 ppm.

Dermal: LD50 - rabbit (male) - 12 126 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: There is inadequate evidence in humans for the carcinogenicity of xylenes. There is inadequate evidence in experimental animals for the carcinogenicity of xylenes. Overall classification: Xylenes are not classifiable as to their carcinogenicity to humans (Group 3)./Xylenes, o,m,p isomers/

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes and skin. The substance may cause effects on the central nervous system. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the central nervous system. Exposure to the substance may increase noise-induced hearing loss. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - 8.4 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: IC50 - *Daphnia magna* - 4.7 mg/L - 24 h.

Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 4.9 mg/L - 72 h.

Toxicity to microorganisms: NOEC - activated sludge of a predominantly domestic sewage - 16 mg/L - 28 d.

Persistence and degradability

AEROBIC: In general, it has been found that 4-xylene is biodegraded in soil and groundwater samples under aerobic conditions(1). Using a standard BOD dilution technique and a sewage inoculum, a 44% of theoretical BOD was observed over a 5 day incubation period(2). Over 88% of an initial influent concentration of 24.0 ug/L was biodegraded by an activated sludge plant treating municipal wastewater(3) over a 5 day operation period. A jet fuel acclimated aquifer mineralized 70-80% of a 4-xylene sample under denitrifying conditions over a 55 day incubation period(4). A coarse sand aquifer removed 52-100% of 4-xylene from contaminated groundwater under natural aerobic conditions over a 13 day incubation period(5). A 0.15 mM sample of 4-xylene was completely degraded in a diesel fuel acclimated aquifer during an 11 day incubation period(6). Complete biodegradation of a groundwater sample of 4-xylene, 85 ug/L, in an activated sand aquifer was observed within 110 days(7). The degradation rate constant for 4-xylene in an activated sand aquifer was measured as 0.038/day(7). The degradation rate constant of 4-xylene measured in the Columbus Air Force Base aquifer, Columbus, MS was 0.0107/days(8). Xylene (mixed isomers), present at 100 mg/L, reached 100% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test which classified xylene as readily biodegradable(9). Using OECD Guideline 301F (Ready Biodegradability: Manometric Respirometry Test) with non-adapted activated sludge inoculum, 4-xylene (41 mg/L) reached 68% of its theoretical BOD in 10 days and 87.8% in 28 days which classified 4-xylene as readily biodegradable(10). In a different OECD Guideline 301F study using a mixture of sewage, soil and natural water inoculum, 4-xylene reached 90% of its O₂ consumption in 28 days which classified it as readily biodegradable(10). 3-/4-Xylene, present at 50 mg/L, reached 85% of its theoretical BOD in 14 days during a 28-day BOD test(11).

Bioaccumulative potential

Experimental BCF values of 15(1,2) and 19(3) have been reported for fish for 4-xylene. Rainbow trout (*Oncorhynchus mykiss*) exposed to xylene (emulsified in aquatic weed control) for 56 days in a flow-through system had a maximum BCF of 25.9(4). According to a classification scheme(5), these BCF values suggest the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

Koc values of 246 and 540 have been measured for 4-xylene in silt and sandy loam soils respectively(1). A Koc value of 204 was measured for 4-xylene using sandy aquifer materials(2). A median experimental Koc value of 295 has also been reported(3). According to a classification scheme(4), these Koc values suggest that 4-xylene is expected to have moderate to low mobility in soil. A soil leaching column study estimated a 4-xylene Koc of 331 using a chromatographic methodology(5). Another soil column leaching study estimated a Koc range of 118-298 based on HPLC measurement(6).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1307 (For reference only, please check.)

IMDG: UN1307 (For reference only, please check.)

IATA: UN1307 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: XYLENES (For reference only, please check.)

IMDG: XYLENES (For reference only, please check.)

IATA: XYLENES (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: II (For reference only, please check.)

IMDG: II (For reference only, please check.)

IATA: II (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Depending on the degree of exposure, periodic medical examination is indicated. The recommendations on this Card also apply to technical xylene. See ICSCs 0084 and 0085.

Disclaimer: 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. We as supplier shall not be held liable for any