

## Chemical Safety Data Sheet MSDS / SDS

## o-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: o-xylene

CAS: 95-47-6

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

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

Uses advised against: none

**Company Identification**

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

**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: o-xylene

Common names and synonyms: o-xylene

CAS number: 95-47-6

EC number: 202-422-2

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. Evacuate personnel to safe areas. 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 32°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. Storage class (TRGS 510): Flammable liquids.

### **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/m<sup>3</sup>, 100 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: D.EU-OEL: 221 mg/m<sup>3</sup>, 50 ppm as TWA; 442 mg/m<sup>3</sup>, 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:	Percent vol: lower 0.9; upper 6.7
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**

A very dangerous fire hazard when exposed to heat or flame. As a result of flow, agitation, etc., electrostatic charges can be generated. O-XYLENE may react with oxidizing materials. (NTP, 1992).

### **Conditions to avoid**

no data available

### **Incompatible materials**

Incompatible materials: Oxidizing agents.

### **Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions - Carbon oxides.

## **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: 2-Xylene has been observed to biodegrade in standard biodegradability tests using various inocula including sewage, activated sludge and sea water(1-4). It was completely degraded in 8 days in groundwater in a gasoline-oil mixture; the acclimation period was 3-4 days(5). In laboratory experiments designed to simulate saturated-flow conditions typical of a river water/ground water infiltration system, degradation was rapid with 70% removal in the first 1.5 cm of the column after 10 days of operation under aerobic conditions(6). Another investigator found that 2-xylene was readily biodegraded (33 mg/day loss) in shallow ground water in an unconfined sand aquifer when oxygen was present(7). As the available oxygen was consumed, the rate of degradation decreased(7). 2-Xylene degraded in two steps with adaptation periods of 14 and 49 days, using an unpolluted groundwater seed(8,9). 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(10). Using OECD Guideline 301F (Ready Biodegradability: Manometric Respirometry Test) with a mixture of sewage, soil and natural water inoculum, 2-xylene reached 90-94% of its O<sub>2</sub> consumption in 28 days which classified xylene as readily biodegradable in two separate studies(11). An OECD Guideline 301F test using activated sludge found >60% degradation in 28 days, but degradation failed the 10-day window for being readily biodegradable(11).

### **Bioaccumulative potential**

A log BCF of 1.15 (BCF of 14) was measured in goldfish(1) and a log BCF of 1.3 was measured in eels (*Anguilla japonica*)(2) for 2-xylene. According to a classification scheme(3), these BCF values indicate that bioconcentration in aquatic organisms is low(SRC). A log BCF value was measured in clams (log BCF of 0.79)(4). A log bioconcentration value of 2.3 ((ug/kg)/(ug/L)) was determined in a green alga, *Selenastrium capricornutum*(5).

### **Mobility in soil**

Koc values measured for 2-xylene in various soils (% organic matter) were 24 in Wendover silty clay (16.2%), 26 in Vaudreil sand loam (10.0%), 68 in St. Thomas sand (3.1%), and 138 in Grimsby silt loam (1.0%)(1). Batch adsorption tests, using three solid sandy aquifer materials gave a Koc of 129(2). The Koc for 2-xylene in surface sediments collected from the central Tamar estuary in the UK was 25.4(3). The Koc values for 2-xylene in two river sediments (% organic matter 6.5-16.9 wt%) was 209 and 251, respectively(4). According to a classification scheme(5), these measured Koc values suggests that 2-xylene is expected to have very high to moderate mobility in soil. Using OECD Guideline 121 (estimating Koc via HPLC), the Koc of 2-xylene was estimated to be 537(6). Concentration enhancement has been observed for 2-xylene in a dune-infiltration project on the Rhine River(7); however, no 2-xylene reached groundwater under a rapid infiltration site(8). The log Koc for 2-xylene in coal sediment (% organic matter 52 wt%) was 2.40(4).

### **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](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 suggested. The recommendations on this Card also apply to technical xylene. See ICSCs 0085 and 0086.

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