

Material Safety Data Sheet

Ortho-Xylene

Section 1 - Chemical Product

MSDS Name: o-Xylene

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
95-47-6	o-Xylene	>98	202-422-2

Hazard Symbols: XN F

Risk Phrases: 11 20/21 38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. **Flammable liquid and vapor.** May cause central nervous system depression. May cause liver and kidney damage. Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes respiratory tract irritation. **Warning!** Causes eye irritation. Prolonged or repeated contact may dry the skin and cause irritation. May be harmful if absorbed through skin or if inhaled. This substance has caused adverse reproductive and fetal effects in animals.

Target Organs: Blood, kidneys, central nervous system, liver, lungs, eyes, skin, mucous membranes.

Potential Health Effects

Eye: Causes severe eye irritation. Splashes of xylene in human eyes generally cause transient superficial injury.

Skin: May be harmful if absorbed through the skin. Xylene contact causes defatting of the skin with irritation, dryness, and cracking. Blistering may occur, particularly if exposure to concentrated xylene is prolonged and the exposed area of skin is occluded.

Ingestion: Aspiration hazard. May cause irritation of the digestive tract. May cause

central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. May cause effects similar to those of acute inhalation.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Prolonged exposure may result in dizziness and general weakness. Irritation may lead to chemical pneumonitis and pulmonary edema. May cause liver and kidney damage. Causes irritation of mucous membrane. Exposure may cause blood abnormalities. Odor is not an adequate warning for overexposure to xylene.

Chronic: Chronic exposure to xylene may cause defatting dermatitis, reversible eye damage, dyspnea (labored breathing), confusion, dizziness, apprehension, memory loss, headache, tremors, weakness, anorexia, nausea, ringing in the ears, irritability, thirst, mild changes in liver function, kidney impairment, anemia, and hyperplasia, but not destruction, of the bone marrow.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Flammable liquid and vapor. Vapors may form an explosive mixture with air. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. This liquid floats on water and may travel to a source of ignition and spread fire. May accumulate static electricity.

Extinguishing Media: Use water spray to cool fire-exposed containers. Water may be ineffective. This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: 87-90 deg F

Autoignition Temperature: 867 deg F (463.89 deg C)

Explosion Limits, Lower: 0.9%

Upper: 6.7%

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces. U.S. regulations require reporting spills and releases to soil, water and air in excess of reportable quantities. This material creates a fire hazard because it floats on water. If possible, try to contain floating material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Keep container closed when not in use. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
o-Xylene	100 ppm TWA; 150 ppm STEL	100 ppm TWA; 435 mg/m ³ TWA 900 ppm IDLH	none listed

OSHA Vacated PELs: o-Xylene: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.



Section 9 - Physical and Chemical Properties

Physical State:

Liquid

Appearance: clear, colorless

Odor: aromatic odor

pH: Not applicable.

Vapor Pressure: 6.72 mm Hg @ 21 deg C

Vapor Density: 3.66 (air=1)

Evaporation Rate: 0.7 (butyl acetate=1)

Viscosity: <32.6 SUS

Boiling Point: 291 deg F

Freezing/Melting Point: -13 deg F

Decomposition Temperature: Not available.

Solubility: Insoluble.

Specific Gravity/Density: 0.87 (water=1)

Molecular Formula: C8H10

Molecular Weight: 106.17

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, ignition sources.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, acetic acid, nitric acid.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 95-47-6: ZE2450000

LD50/LC50:

Not available.

Carcinogenicity:

CAS# 95-47-6:

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: IARC Group 3 - not classifiable (listed as Xylenes (o-, m-, p- isomers)).

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: There is ample evidence that xylene produces embryotoxicity (reduced body weight, retarded ossification, retarded kidney development, increased extra rib) and fetotoxicity in mice and rats, but xylene is not considered teratogenic.

Neurotoxicity: No information available.

Mutagenicity: No information available.

Other Studies: Standard Draize Test: Administration into the eye (rabbit) = 5 mg/24H (Severe). Standard Draize Test: Administration onto the skin (rabbit) = 500 mg (Moderate).

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 13.5 mg/L; 96 Hr; Unspecified Goldfish: LD50 = 13 mg/L; 24 Hr; Unspecified Fathead Minnow: LC50 = 46 mg/L; 1 Hr; Static bioassay Acute and long-term toxicity to fish and invertebrates: LD50 for goldfish is 13 mg/L/24 Hr. Cas#1330-20-7: LC50(96Hr.) rainbow trout = 8.05 mg/L, Static condition; LC50(96Hr.) fathead minnow = 16.1 mg/L, flow-through conditions; LC50(96Hr.) bluegill = 16.1 mg/L, flow-through; EC50 (48 Hr.) water flea = 3.82 mg/L, flow-through conditions; EC50(24 Hr.) photobacterium phosphoreum = 0.0084 mg/L, Microtox test.

Environmental: In air, xylenes degrade by reacting with photochemically produced hydroxyl radicals. In soil it will volatilize and leach into groundwater. Little bioconcentration is expected.

Physical: ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, xylene, which has an experimental vapor pressure of 7.99 mm Hg at 25 deg C, will exist solely as a vapor in the ambient atmosphere. Vapor-phase xylene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the atmospheric lifetime of xylene is about 14-26 hours. Ambient levels of xylene are detected in the atmosphere due to large emissions of this compound.

Other: None

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	XYLEMES				XYLENE
Hazard Class:	3				3(9.2)
UN Number:	UN1307				UN1307
Packing Group:	II				III
Additional Info:					FLASHPOINT 32C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 95-47-6 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 95-47-6: Effective Date: 10/4/82; Sunset Date: 10/4/92

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA**CERCLA Hazardous Substances and corresponding RQs**

CAS# 95-47-6: 1000 lb final RQ (Listed under Xylene, mixed); 454 kg final RQ (Listed unde

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 95-47-6: acute, chronic, flammable.

Section 313

This material contains o-Xylene (CAS# 95-47-6, 98%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 95-47-6 is listed as a hazardous air pollutant (HAP). This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 95-47-6 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 95-47-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN F

Risk Phrases:

R 11 Highly flammable.

R 20/21 Harmful by inhalation and in contact with skin.

R 38 Irritating to skin.

Safety Phrases:

S 25 Avoid contact with eyes.

WGK (Water Danger/Protection)

CAS# 95-47-6: 2

Canada - DSL/NDSL

CAS# 95-47-6 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

Canadian Ingredient Disclosure List

CAS# 95-47-6 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 95-47-6 (listed as xylenes (o-, m-, p- isomers)): OEL-ARAB Republ
ic of Egypt:TWA 0.5 ppm (0.9 mg/m3) OEL-AUSTRALIA:TWA 80 ppm (330 mg/
m3);STEL 150 ppm (655 mg/m3) OEL-BELGIUM:TWA 100 ppm (434 mg/m3);STEL
150 ppm (651 mg/m3) OEL-CZECHOSLOVAKIA:TWA 200 mg/m3;STEL 1000 mg/m3
OEL-DENMARK:TWA 50 ppm (217 mg/m3);Skin OEL-FINLAND:TWA 100 ppm (43
5 mg/m3);STEL 150 ppm;Skin OEL-FRANCE:TWA 100 ppm (435 mg/m3);STEL 15
0 ppm (650 mg/m3) OEL-GERMANY:TWA 100 ppm (440 mg/m3) OEL-HUNGARY:TW
A 100 mg/m3;STEL 300 mg/m3 OEL-JAPAN:TWA 100 ppm (430 mg/m3) OEL-THE
NETHERLANDS:TWA 100 ppm (435 mg/m3);Skin OEL-THE PHILIPPINES:TWA 0.1
mg/m3 OEL-POLAND:TWA 100 mg/m3 OEL-SWEDEN:TWA 50 ppm (200 mg/m3);ST
EL 100 ppm (450 mg/m3);Skin OEL-SWITZERLAND:TWA 100 ppm (436 mg/m3);S
TEL 200 ppm (870 mg/m3) OEL-THAILAND:TWA 100 ppm (435 mg/m3) OEL-TUR
KEY:TWA 100 ppm (435 mg/m3) OEL-UNITED KINGDOM:TWA 100 ppm (435 mg/m3
);STEL 150 ppm;Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check AC
GIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV