SAFETY DATA SHEET

Updated on 06/07/2025

1. Material Identification

Product Name : o-Xylene
Catalog Number : io-3204
CAS Number : 95-47-6
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Pictogram(s)

>> Warning

GHS Hazard Statements

>> H226: Flammable liquid and vapor [Warning Flammable liquids]

>> H312: Harmful in contact with skin [Warning Acute toxicity, dermal]

>> H315: Causes skin irritation [Warning Skin corrosion/irritation]

>> H332: Harmful if inhaled [Warning Acute toxicity, inhalation]

Precautionary Statement Codes

>> P210, P233, P240, P241, P242, P243, P261, P264, P271, P280, P302+P352, P303+P361+P353, P304+P340, P317, P321, P332+P317, P362+P364, P370+P378, P403+P235, and P501

NFPA 704 Diamond

NFPA Health Rating

>> 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA Fire Rating

>> 3 - Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions.

NFPA Instability Rating

>> 0 - Materials that in themselves are normally stable, even under fire conditions.

Health Hazards:

>> 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)

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

>> Flammable. Above 30 °C explosive vapour/air mixtures may be formed.

3. Composition/Information On Ingredients

Chemical name : o-Xylene
CAS Number : 95-47-6
Molecular Formula : C8H10
Molecular Weight : 106.1600 g/mol

4. First Aid Measures

First Aid:

>> EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

>> SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

>> INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

>> INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. (NTP, 1992)

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Refer for medical attention.

Skin First Aid

>> First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Rinse and then wash skin with water and soap.

Eye First Aid

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

Ingestion First Aid

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

5. Fire Fighting Measures

>> Fire Extinguishing Agents Not to Be Used: Water may be ineffective.

>> Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide (USCG, 1999)

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

6. Accidental Release Measures

Isolation and Evacuation:

Isolation and evacuation measures to take when a large amount of this chemical is accidentally released in an emergency.

>> Excerpt from ERG Guide 130 [Flammable Liquids (Water-Immiscible / Noxious)]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area for at least 50 meters (150 feet) in all directions.

>> LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet).

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> 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.

7. Handling And Storage

Safe Storage:

>> Fireproof. Store only in original container. Separated from strong oxidants and strong acids. Store in an area without drain or sewer access.

Storage Conditions:

>> 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.

8. Exposure Control/ Personal Protection

>> TWA 100 ppm (435 mg/m3) ST 150 ppm (655 mg/m3)

>> TWA 100 ppm (435 mg/m3) See Appendix G

>> 8 hr Time Weighted Avg (TWA): 100 ppm; 15 min Short Term Exposure Limit (STEL): 150 ppm. /Xylene (o-, m-, & p-isomers)/

>> 100 ppm as TWA; 150 ppm as STEL; A4 (not classifiable as a human carcinogen); BEI issued.

EU-OEL

>> 221 mg/m

Inhalation Risk:

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

Effects of Short Term Exposure:

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

Effects of Long Term Exposure:

>> The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the central nervous system. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Fire Prevention

>> NO open flames, NO sparks and NO smoking. Above 30 °C use a closed system, ventilation and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding). NO contact with incompatible materials: See Chemical Dangers

Inhalation Prevention

>> Use local exhaust or breathing protection.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety spectacles or face shield.

Ingestion Prevention

>> Do not eat, drink, or smoke during work.

9. Physical And Chemical Properties

Molecular Weight:

>> 106.16

Exact Mass:

>> 106.078250319

Physical Description:

>> O-xylene appears as a colorless watery liquid with a sweet odor. Less dense than water. Insoluble in water. Irritating vapor. (USCG, 1999)

>> COLOURLESS LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Colorless liquid

Odor:

>> Sweet

Boiling Point:

>> 289 to 293 °F at 760 mmHg (NTP, 1992)

>> 144 °C

Melting Point:

>> -13 to -9 °F (NTP, 1992)

>> -25 °C

Flash Point:

>> 63 °F (NTP, 1992)

>> 30 °C c.c.

Solubility:

>> Insoluble (NTP, 1992)

>> Solubility in water, g/l at 20 °C: 0.18 (very slightly soluble)

Density:

>> 0.88 at 68 °F (USCG, 1999) - Less dense than water; will float

>> Relative density (water = 1): 0.88 (20 °C)

Vapor Density:

>> 3.66 (NTP, 1992) - Heavier than air; will sink (Relative to Air)

>> Relative vapor density (air = 1): 3.7

Vapor Pressure:

>> 10 mmHg at 89.8 °F (NTP, 1992)

>> Vapor pressure, kPa at 20 °C: 0.7

LogP:

>> log Kow = 3.12

>> 3.12

Stability/Shelf Life:

>> Stable under recommended storage conditions.

Autoignition Temperature:

>> 869 °F (USCG, 1999)

>> 465 °C

Decomposition:

>> Hazardous decomposition products formed under fire conditions - Carbon oxides.

Viscosity:

>> 0.760 mPa.s at 25 °C

>> 0.81 mPa*s at 20 °C

Corrosivity:

The ability of a chemical to damage or destroy other substances when it comes into contact.

>> No reaction with common materials

Heat of Combustion:

>> -17,558 Btu/lb = -9754.7 cal/g = -408.41 X 105 J/kg

Heat of Vaporization:

>> 43.43 kJ/mol at 25 °C; 36.24 kJ/mol at 144.5 °C

Surface Tension:

>> 29.76 dynes/cm at 25 °C

Ionization Potential:

>> 8.56 eV

Odor Threshold:

>> 0.05 ppm

Refractive Index:

>> Index of refraction: 1.5058 at 20 °C/D

Relative Evaporation Rate:

The rate at which a material will vaporize (evaporate, change from liquid to vapor), compared to the rate of vaporization of a specific known material.

>> 9.2 (Ether = 1)

10. Stability And Reactivity

>> Highly flammable. Insoluble in water.

>> Highly Flammable

11. Toxicological Information

Toxicity Summary:

>> IDENTIFICATION AND USE: 2-Xylene (o-xylene) is a colorless liquid. It is used in manufacture of phthalic anhydride, vitamin and pharmaceutical syntheses, dyes, insecticides, motor fuels. HUMAN EXPOSURE AND TOXICITY: Severe toxic effects result from exposure to o-xylene at 1,000 ppm or 4,410 mg/cu m for 60 minutes. Symptoms of illness result from exposure to 300 ppm or 1,323 mg/ cu m for 60 minutes. Levels of xylenes in blood reflect recent exposure. The m- and p-xylene isomers usually are measured together and reported as m/p-xylene; the o-xylene isomer is measured and reported separately. ANIMAL STUDIES: In a study on the noradrenaline and dopamine levels in various parts of the forebrain and hypothalamus, rats (six males/group) were exposed to 0 or 2000 ppm o-xylene 6 hr/day for 3 days. The animals were killed within 18 hr after final exposure. There was a significant increase in catecholamine levels and turnover in various parts of the hypothalamus and a decrease in the dopamine turnover in the forebrain of exposed animals. Administration of xylenes to rats caused decreases in liver glutathione (GSH) concentrations, reduction in glutathione concentration was most pronounced after treatment with o-xylene isomer (4.0 mmol/kg). Exposure of rats to 2000 ppm of o-xylene for 3 days increased hepatic cytochrome P450 concentration and reduced nicotinamide adenine dinucleotide cytochrome C reductase activity. In kidney microsomes an increased concentration of cytochrome P450 was obtained following exposure to o-xylene. Exposures at 1450 ppm of o-xylene reduced the respiratory rate of mice 50% in a manner consistent with sensory irritation. Comparison of the individual xylene isomers showed that the irritant effects of m- and o-xylene as quantified by measurements of respiratory rate in mice are more pronounced than those of p-xylene, with o-xylene having the most prolonged effect. Rats, guinea-pigs, monkeys, and dogs were exposed either to 780 ppm (3368 mg/cu m) o-xylene for 8 hours per day on five days per week for six weeks or to 78 ppm (337 mg/cu m) continuously for 90 days. No significant change in body weight or in hematological parameters and no significant toxicity were observed after histopathological examination of all major organs. Male rats inhaling air containing o-xylene, 4750 mg/cu m/8 hr/day, for 1 yr, had no pathological alterations in liver morphology, but increased levels of liver cytochrome P450, cytochrome B5, nicotinamide adenine dinucleotide phosphate cytochrome C reductase, aminopyrine N-demethylase, and aniline hydroxylase. o-Xylene also increased food and water consumption and relative liver wt. Mice were exposed to 0 or 115 ppm o-xylene for 4 hr, 3 times per day on day 6 to day 15 of gestation, and the dams were killed on day 18. There was evidence of delayed weight gain and skeletal ossification in the fetuses of exposed animals. When rabbits were exposed to 0 or 115 ppm o-xylene 24 hr/day from day 7 to day 20 of gestation, no maternal toxicity or incidence of delayed development was observed in the exposed group. None of the isomers nor unspecified xylene was mutagenic to Salmonella typhimurium TA1535, TA1537, TA98, TA100, UTH 8413 or UTH8414 in the presence or absence of a metabolic activation. None of the xylene isomers induced micronuclei in the bone marrow of male mice after two ip administrations of 105-650 mg/kg body weight at a 24-hr interval, but they did, however, enhance the induction of micronuclei by toluene. ECOTOXICITY STUDIES: The xylene isomers have a similar degree of toxicity as mixed xylenes to estuarine/marine invertebrates. For o-xylene, acute toxicity values range from the 96-hour embryo lethality EC50 value of 4.1 mg/L in sea urchin eggs, to the 48-hour LC50 value of 24.7 mg/L in brine shrimp. Results of these studies indicate that o-xylene is slightly to moderately toxic to estuarine/marine invertebrates on an acute basis.

RAIS Toxicity Values:

This section provides the Chemical toxicity information from the Risk Assessment Information System.

Inhalation Acute Reference Concentration (RfCa) (mg/m^3)

>> 22

Inhalation Acute Reference Concentration Reference

>> CALEPA

Inhalation Chronic Reference Concentration (RfC) (mg/m^3)

>> 0.1

Inhalation Chronic Reference Concentration Reference

>> SURROGATE. See Xylenes

Oral Chronic Reference Dose (RfDoc) (mg/kg-day)

>> 0.2

Oral Chronic Reference Dose Reference

>> SURROGATE. See Xylenes

USGS Health-Based Screening Levels for Evaluating Water-Quality:

This section provides the USGS Health-Based Screening Levels for Evaluating Water-Quality data.

Chemical

>> o-Xylene

USGS Parameter Code

>> 77135

MCL (Maximum Contaminant Levels)[µg/L]

>> 10000

Benchmark Remarks

>> data are for xylenes, CASRN 1330207

Reference

>> Smith, C.D. and Nowell, L.H., 2024. Health-Based Screening Levels for evaluating water-quality data (3rd ed.). DOI:10.5066/F71C1TWP

Evidence for Carcinogenicity:

Evidence that this chemical does or may cause cancer. The information here is collected from various sources by the Hazardous Substances Data Bank (HSDB).

>> 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/

Carcinogen Classification:

This section provides the International Agency for Research on Cancer (IARC) Carcinogenic Classification and related monograph links. In the IARC Carcinogenic classification, chemicals are categorized into four groups: Group 1 (carcinogenic to humans), Group 2A (probably carcinogenic to humans), Group 2B (possibly carcinogenic to humans), and Group 3 (not classifiable as to its carcinogenicity to humans).

>> 3, not classifiable as to its carcinogenicity to humans. (L135)

Health Effects:

>> Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache, convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticdes in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides.

Exposure Routes:

>> The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

>> inhalation, skin absorption, ingestion, skin and/or eye contact

Signs and Symptoms:

Symptoms of exposure to this chemical through various routes (for example, ingestion, inhalation, skin contact, and eye contact).

Inhalation Exposure

>> Dizziness. Drowsiness. Headache. Nausea.

Skin Exposure

>> Dry skin. Redness.

Eye Exposure

>> Redness. Pain.

Ingestion Exposure

>> Burning sensation. Abdominal pain. Further see Inhalation.

>> irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis

Target Organs:

Organs that are affected by exposure to this chemical. Information in this section reflects human data unless otherwise noted.

>> Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys

Toxicity Data:

>> LD50: 4595 ppm (Inhalation, Mouse) (L165)

Minimum Risk Level:

The minimal risk level (MRL) is an estimate of the amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health

>> Acute Inhalation: 2 ppm (L165) Intermediate Inhalation: 0.6 ppm (L165) Chronic Inhalation: 0.05 ppm (L165) Acute Oral: 1 mg/kg/day (L165) Intermediate Oral: 0.4 mg/kg/day (L165) Chronic Oral: 0.2 mg/kg/day (L165)

Treatment:

Treatment when exposed to toxin

>> If the compound has been ingested, rapid gastric lavage should be performed using 5% sodium bicarbonate. For skin contact, the skin should be washed with soap and water. If the compound has entered the eyes, they should be washed with large quantities of isotonic saline or water. In serious cases, atropine and/or pralidoxime should be administered. Anti-cholinergic drugs work to counteract the effects of excess acetylcholine and reactivate AChE. Atropine can be used as an antidote in conjunction with pralidoxime or other pyridinium oximes (such as trimedoxime or obidoxime), though the use of '-oximes' has been found to be of no benefit, or possibly harmful, in at least two meta-analyses. Atropine is a muscarinic antagonist, and thus blocks the action of acetylcholine peripherally.

Interactions:

>> Male Wistar rats were exposed by inhalation for 4 hr to 1000 mg/cu m (230 ppm) of o-xylene or 1700 ppm of acetone alone, or in combination. In the combination exposure, blood xylene immediately after the exposure was increased by 40% whereas the blood acetone level was decreased by 15%. In a corresponding study, H-strain mice were exposed for 2 hr to 1392 mg/cu m (320 ppm) of o-xylene or 6655 mg/cu m (1530 ppm) of acetone alone or in combination. The combination exposure was accompanied by a 33% increase of the blood xylene concentration whereas the blood acetone level was decreased by 18%.

Antidote and Emergency Treatment:

>> 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/

Human Toxicity Excerpts:

>> /HUMAN EXPOSURE STUDIES/ After oral administration of o-xylene (39 mg/kg body weight) maximum urinary levels of glycine and glucuronide conjugates of o-methylbenzoic acid were reported to be 33.1 and 1.0% of the administered dose, respectively. Similar values were obtained after an oral dose of 78 mg/kg body weight. About 4-5% of the dose absorbed in the lungs is exhaled unchanged after exposure to 870 mg/cu m (200 ppm) xylene. Elimination in exhaled breath is reported to follow a similar triphasic profile to that for urinary excretion of methylbenzoic acid conjugates. An initial half-time of about one hour was obtained in a study.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ The LC50 value for o-xylene in Sprague-Dawley rats (12 males/group) was calculated to be 4330 ppm (95% confidence limits 4247-4432 ppm) for a 6-hr exposure. The reported signs of

intoxication were hypotonia and somnolence. Autopsy on surviving animals 14 days later revealed no macroscopic lesions of lung, liver or kidneys.

Non-Human Toxicity Values:

>> LD50 Rat oral 3608 mg/kg bw

National Toxicology Program Studies:

Reports from the National Toxicology Program, an interagency program supported by three government agencies (NIH, FDA, and CDC) within the Department of Health and Human Services. This program plays a critical role in generating, interpreting, and sharing toxicological information about chemicals of public health concerns.

>> ... Xylenes, the individual isomers (o-xylene, m-xylene, and p-xylene), were not mutagenic when tested with or without metabolic activation in Salmonella typhimurium strain ... TA98, TA100, or TA135 with the preincubation protocol.

TSCA Test Submissions:

Under the Toxic Substances Control Act (TSCA), EPA has broad authority to issue regulations designed to require manufacturers (including importers) or processors to test chemical substances and mixtures for health and environmental effects. This section provides information on test reports submitted for this chemical under TSCA.

>> In an acute toxicity study, male Charles River rats (5/group) were given single gavage exposures to o-xylene. The animals were observed for up to 14 days following exposure. Exposure levels of 2.025, 3.038, 4.556, and 6.834 g/kg resulted in the following mortality results (number of deaths): 1, 1, 3, and 4, respectively. Most of the deaths occurred within 2 days. The LD50 is 4.100 (3.060 to 5.494) g/kg. Gross pathological examination of the animals which died during the study revealed pale, discolored kidneys whereas examination of the survivors did not reveal any pathologic alterations. Reactions observed at all dose levels included hypoactivity and muscular weakness. At 3.038 g/kg and above, the animals also exhibited ruffed fur, labored breathing, and tremors. At 4.556 g/kg and above, the animals also exhibited salivation, prostration, diarrhea, and lacrimation. At the highest dose level, the animals also exhibited rhinitis.

12. Ecological Information

Resident Soil (mg/kg)

>> 6.40e+02

Industrial Soil (mg/kg)

>> 2.80e+03

Resident Air (ug/m3)

>> 1.00e+02

Industrial Air (ug/m3)

>> 4.40e+02

Tapwater (ug/L)

>> 1.90e+02

MCL (ug/L)

>> 2.00e+00

Risk-based SSL (mg/kg)

>> 1.90e-01

Chronic Oral Reference Dose (mg/kg-day)

>> 2.00e-01

Chronic Inhalation Reference Concentration (mg/m3)

>> 1.00e-01

Volatile

>> Volatile

Mutagen

>> Mutagen

Fraction of Contaminant Absorbed in Gastrointestinal Tract

>> 1

Soil Saturation Concentration (mg/kg)

>> 4.34e+02

ICSC Environmental Data:

>> The substance is toxic to aquatic organisms.

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: 2-Xylene was detected, not quantified in lake sediment 8 km downstream from Napawin, Saskatchewan, a source of agricultural, mining, petrochemical, pulp and paper and municipal wastes(1). An unspecified sediment contained 500 ppb 2-xylene(2). Six sediment samples, taken at an Amphenol plant in Broadview, Illinois indicate the presence of xylenes at concns <10ppb(3).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> 2-Xylene was detected, not quantified, in rainbow trout (Salmo gairdneri) from the Colorado River below Hoover Dam and carp taken from Las Vegas Wash, NV(1).

Average Daily Intake:

The average amount of the compound taken into the body through eating, drinking, or breathing.

>> AIR INTAKE: Assuming inhalation of 23 cu m/day by a 70 kg adult(1), the daily 2-xylene intake from air exposed to median levels in rural, urban, and source dominated areas would be 0.1, 1.7, and 1.2 ug/kg day; WATER INTAKE:(assume typical concn of 1 ppb(1)) 2 ug; FOOD INTAKE: insufficient data.

13. Disposal Considerations

Spillage Disposal

>> 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.

Disposal Methods

>> Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U239 and F003, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.

>> SRP: Wastewater from contaminant suppression, cleaning of protective clothing/equipment, or contaminated sites should be contained and evaluated for subject chemical or decomposition product concentrations. Concentrations shall be lower than applicable environmental discharge or disposal criteria. Alternatively, pretreatment and/or discharge to a permitted wastewater treatment facility is acceptable only after review by the governing authority and assurance that "pass through" violations will not occur. Due consideration shall be given to remediation worker exposure (inhalation, dermal and ingestion) as well as fate during treatment, transfer and disposal. If it is not practicable to manage the chemical in this fashion, it must be evaluated in accordance with EPA 40 CFR Part 261, specifically Subpart B, in order to determine the appropriate local, state and federal requirements for disposal.

>> Product: 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. Offer surplus and non-recyclable solutions to a licensed disposal company; Contaminated packaging: Dispose of as unused product.

14. Transport Information

DOT

o-Xylene
3
UN Pack Group: III
Reportable Quantity of 1000 lb or 454 kg

IATA

o-Xylene
3,
UN Pack Group: III

15. Regulatory Information

State Drinking Water Standards:

State drinking water standards (e.g. maximum containment level (MCL)) for this chemical. These standards are legally enforceable.

>> (CA) CALIFORNIA 1750 ug/L

Clean Water Act Requirements:

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under CWA, the U.S. Environmental Protection Agency (EPA) developed the Toxic Pollutant List (40 CFR Part 401.15) and the Priority Pollutant List (40 CFR Part 423, Appendix A). These lists are to be used by EPA and States to develop the Effluent Guidelines regulations and ensure water quality criteria and standards.

>> o-Xylene is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

TSCA Requirements:

This section provides information on requirements concerning this chemical under the Toxic Substances Control Act (TSCA) of 1976. TSCA provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides.

>> Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. o-Xylene is included on this list. Effective date 10/4/82; Sunset date: 10/4/92.

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Benzene, 1,2-dimethyl-

REACH Registered Substance

>> Status: Active Update: 27-02-2023 https://echa.europa.eu/registration-dossier/-/registered-dossier/15482

New Zealand EPA Inventory of Chemical Status

>> Benzene, dimethyl-, mixed isomers: HSNO Approval: HSR000983 Approved with controls

New Zealand EPA Inventory of Chemical Status

>> Benzene, 1,2-dimethyl-: HSNO Approval: HSR001237 Approved with controls

New Jersey Worker and Community Right to Know Act

>> The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)

16. Other Information

Other Safety Information

Chemical Assessment

>> IMAP assessments - Benzene, 1,2-dimethyl-: Environment tier I assessment

>> IMAP assessments - Xylenes: Human health tier II assessment

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