ionz

SAFETY DATA SHEET

Updated on 27/09/2024

1. Material Identification

Product Name : p-Xylene
Catalog Number : io-3205
CAS Number : 106-42-3
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)

GHS Hazard Statements

>> H226 (100%): Flammable liquid and vapor [Warning Flammable liquids]

>> H304 (19.9%): May be fatal if swallowed and enters airways [Danger Aspiration hazard]

>> H312 (99.9%): Harmful in contact with skin [Warning Acute toxicity, dermal]

>> H315 (100%): Causes skin irritation [Warning Skin corrosion/irritation]

>> H319 (52.8%): Causes serious eye irritation [Warning Serious eye damage/eye irritation]

>> H332 (100%): Harmful if inhaled [Warning Acute toxicity, inhalation]

>> H335 (20.2%): May cause respiratory irritation [Warning Specific target organ toxicity, single exposure; Respiratory tract irritation]

>> H412 (18.8%): Harmful to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P210, P233, P240, P241, P242, P243, P261, P264, P264+P265, P271, P273, P280, P301+P316, P302+P352, P303+P361+P353, P304+P340, P305+P351+P338, P317, P319, P321, P331, P332+P317, P337+P317, P362+P364, P370+P378, P403+P233, P403+P235, P405, 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 27 °C explosive vapour/air mixtures may be formed.

3. Composition/Information On Ingredients

Chemical name : p-Xylene
CAS Number : 106-42-3
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

>> Remove contaminated clothes. 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. Separated from strong oxidants and strong acids.

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.

8. Exposure Control/ Personal Protection

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

>> 100.0 [ppm]

>> 100.0 [ppm]

TLV-STEL

>> 150.0 [ppm]

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

EU-OEL

>> 221 mg/m

MAK (Maximale Arbeitsplatz Konzentration)

>> 220 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. The substance may cause effects on the central nervous system. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis.

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. Exposure to the substance may increase noise-induced hearing loss. 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 27 °C use a closed system, ventilation and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding).

Exposure Prevention

>> STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!

Inhalation Prevention

>> Use ventilation, local exhaust or breathing protection.

Skin Prevention

>> Protective gloves.

Eye Prevention

>> Wear safety spectacles.

Ingestion Prevention

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

Exposure Control and Personal Protection

Exposure Summary

>> Biological Exposure Indices (BEI) [ACGIH] - Xylenes (technical or commercial grades): 0.3 g/g creatine methylhippuric acids in urine at end of shift; [ACGIH TLVs and BEIs]

Maximum Allowable Concentration (MAK)

>> 100.0 [ppm]

9. Physical And Chemical Properties

Molecular Weight:

>> 106.16

Exact Mass:

>> 106.078250319

Physical Description:

>> P-xylene appears as a colorless watery liquid with a sweet odor. Less dense than water. Insoluble in water. Irritating vapor. Freezing point is 56 °F. (USCG, 1999)

>> COLOURLESS LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Colorless plates or prisms at low temp

Odor:

>> Sweet

Boiling Point:

>> 280.9 °F at 760 mmHg (NTP, 1992)

>> 138 °C

Melting Point:

>> 55.9 °F (NTP, 1992)

>> 13 °C

Flash Point:

>> 81 °F (NTP, 1992)

>> 27 °C c.c.

Solubility:

>> Insoluble. (NTP, 1992)

>> Solubility in water: none

Density:

>> 0.861 at 68 °F (USCG, 1999) - Less dense than water; will float

>> Relative density (water = 1): 0.86

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 81.1 °F (NTP, 1992)

>> Vapor pressure, kPa at 20 °C: 0.9

LogP:

>> log Kow = 3.15

>> 3.15

Stability/Shelf Life:

>> Stable under recommended storage conditions.

Autoignition Temperature:

>> 984 °F (USCG, 1999)

>> 528 °C

Decomposition:

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

Viscosity:

>> 0.603 mPa.s at 25 °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:

>> -17,559 Btu/lb = -9754.7 cal/g = -408.41X10+5 J/kg

Heat of Vaporization:

>> 42.40 kJ/mol at 35 °C; 35.67 kJ/mol at 138.23 °C

Surface Tension:

>> 28.01 dynes/cm at 25 °C

Ionization Potential:

>> 8.44 eV

Odor Threshold:

>> Odor Threshold Low: 0.05 [mmHg]

>> Odor threshold from CHRIS

Refractive Index:

>> Index of refraction: 1.49575 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.

>> Evaporation rate: 9.9 (ether= 1)

10. Stability And Reactivity

>> Highly flammable. Insoluble in water.

>> Highly Flammable

11. Toxicological Information

Toxicity Summary:

>> IDENTIFICATION AND USE: 4-Xylene (p-xylene) is a colorless liquid (Note: A solid below 56 degrees F). It is used for synthesis of terephthalic acid for polyester resins and fibers; pharmaceutical synthesis; insecticides. p-Xylene is also frequently used for paints or in the printing trade. HUMAN EXPOSURE AND TOXICITY: Three women exposed to p-xylene at 100 ppm for 1 to 7.5 hours/day, for 5 days, showed no effects on electroencephalograms, evoked potentials, or cognitive performance, but frequently reported headache and dizziness as a result of exposure. In contrast, four men exposed at concentrations of up to 150 ppm p-xylene under the same exposure conditions reported no increase in headaches or dizziness. Slight impairment of vestibular and visual function and reaction time was noted at exposure levels from 200 to 300 ppm. There was adaption to the impairment over five successive daily exposures. Human data indicate that acute inhalation exposures to 460 ppm mixed xylene and 100 ppm p-xylene vapors produce mild and transient eye irritation. p-Xylene is possibly ototoxic at concentrations that are relevant to the occupational setting. Levels of blood xylenes reflect recent exposure. The m-and p-xylene isomers usually are measured together and reported as m/p-xylene. ANIMAL STUDIES: Increased hepatic cytochrome p450 concentrations and reduced nicotinamide adenine dinucleotide cytochrome C reductase activity occurred in rats exposed 3 days to 2000 ppm of p-xylene. In lung microsomes, cytochrome p450 content was decreased. Marked activation and tremor were observed at concentrations between 400 and 1500 ppm p-xylene in rats. The CNS depressant threshold was 1940 ppm. In a study of levels of noradrenaline and dopamine in the forebrain and hypothalamus, rats (six males/group) were exposed to 0 or 2000 ppm p-xylene 6 hr/day for 3 days. The animals were killed 16-18 hr after the last exposure. In exposed animals there was a significant increase in catecholamine levels and turnover in various parts of the hypothalamus. There was no effect on dopamine levels or turnover in the forebrain. Histological damage to the outer hair cells of the organ of Corti provided evidence of ototoxicity in rats exposed by oral gavage to p-xylene, but not m- or o-xylene, at a dose of 900 mg/kg/day, 5 days/week for 2 weeks. The losses of hair cells occurred in the area of the cochlea responsive to medium frequencies (10-25 kHz). Mice were exposed to p-xylene at 150, 1500, or 3000 mg/cu m, 24 hr/day from days 7-14 of gestation. Toxic effects were decr weight of fetuses, increased incidence of skeletal retardation, and decrease in activity of enzymes, succinic dehydrogenase, alkaline, acid phosphatase, glucose 6-phosphatase and changed characteristic features of functional maturity of the nephron, retardation of fetus was dose related. In other experiment, increased incidence of malformations mostly cleft palates, were observed only with m- or p-xylene. Malformations (ie cleft palate) associated with mixed or individual isomers were primarily reported at maternally toxic doses. Each xylene isomer was administered to male rats intraperitoneally in 2 similar doses, 24 hours apart over a range of concentrations from 0, 0.12-0.75 mL/kg (105-650 mg/kg) and evaluated femoral bone marrow 30 hours after the first injection. No increase in micronucleated polychromatic erythrocytes was observed for any xylene isomer. p-Xylene was nonmutagenic using the Ames assay. It did not revert Salmonella typhimurium strains TA1535, TA1537, TA1538, TA98, & TA100 either with or without metabolic activation. ECOTOXICITY STUDIES: The xylene isomers have a similar degree of toxicity as mixed xylenes to estuarine/marine invertebrates. For m-xylene and p-xylene, the respective 48-hour LC50 values are 19.3 and 24.5 mg/L in brine shrimp, suggesting that the m-xylene and p-xylene isomers are slightly toxic to estuarine/marine invertebrates on an acute basis.

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

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

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Neurotoxin - Acute solvent syndrome

>> Occupational hepatotoxin - Secondary hepatotoxins: the potential for toxic effect in the occupational setting is based on cases of poisoning by human ingestion or animal experimentation.

>> ACGIH Carcinogen - Not Classifiable.

Toxicity Data:

>> LC50 (rat) = 4,550 ppm4hr

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:

>> Sixteen men were studied in an exposure chamber to assess the effect of four hr exposure to toluene (3.25 mmol/cu m), p-xylene (2.84 mmol/cu m) a mixture of toluene and p-xylene (2.20 + 0.94 mmol/cu m) and a control condition. With the aid of microcomputers subjects performed tests of simple reaction time, short term memory, and choice reaction time immediately after entering the chamber, after two, and after four hours of exposure. The results indicate that the performance on the tests was unaffected by exposure. In the light of this result, the risk of an acute effect on central nervous functions after exposure for four hours at these concn was considered to be minimal.

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/ Objective measures of neurological function (electroencephalography, tests of motor activity and cognitive performance) in humans are not affected by acute or intermediate, intermittent or continuous inhalation exposure to p-xylene for 4 hours or up to 7 hours for 5 days at concentrations ranging from 69 to 150 ppm ... . Differences in such factors as the xylene isomer, the neurological parameter, exposure conditions and concentrations, rapid development of tolerance, and total xylene uptake may account for the variability in results. However, some sex difference in subjective reports of central nervous system effects was observed ... . Three women exposed to p-xylene at 100 ppm for 1 to 7.5 hours/day, for 5 days, showed no effects on electroencephalograms, evoked potentials, or cognitive performance, but frequently reported headache and dizziness as a result of exposure ... . In contrast, four men exposed at concentrations of up to 150 ppm p-xylene under the same exposure conditions reported no increase in headaches or dizziness.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ Increased hepatic cytochrome p450 concentrations and reduced nicotinamide adenine dinucleotide cytochrome C reductase activity occurred in rats exposed 3 days to 2000 ppm of p-xylene. In lung microsomes, cytochrome p450 content was decreased.

Non-Human Toxicity Values:

>> LD50 Rat oral 4029 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 strains TA100, TA135, TA97, or TA98 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 p-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): 0, 0, 2, and 4, respectively. Most of the deaths occurred within 2 days. The LD50 is 5.145 g/kg. Gross pathological examination of the animals which died during the study revealed gastroenteritis and pale, discolored kidneys whereas examination of the survivors did not reveal any pathologic alterations. Reactions observed at all dose levels included hypoactivity and rhinitis. At 3.038 g/kg and above, the animals also exhibited ruffed fur, muscular weakness, salivation, and tremors. At 4.556 g/kg and above, the animals also exhibited prostration and hemorrhagic lacrimation.

12. Ecological Information

Resident Soil (mg/kg)

>> 5.60e+02

Industrial Soil (mg/kg)

>> 2.40e+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)

>> 3.90e+02

ICSC Environmental Data:

>> The substance is toxic to aquatic organisms.

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: Sediment collected from the River Morava, Slovakia, contained 3- and 4-xylene, combined, at concentrations from 0.21 to 1.53 ug/kg wet weight(1). Sediment samples from the River Tees estuary, England, contained 3- and 4-xylene, combined, at concentrations from 3.4 to 250 ppb(2).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> Combined 3-/4-xylene was detected in rainbow trout from the Colorado River and carp obtained from Las Vegas Wash, NV at concentrations of 50 and 120 ppb respectively(1).

Average Daily Intake:

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

>> The average daily intake of total xylene (sum of o-, m-, and p-xylene intakes) for the general population is estimated as 0.3-8.6 ug/kg/day from inhalation exposure and 0.06 ug/kg/day from ingestion of drinking water assuming typical low background levels(1). Based on a maximal concentration of 1.5 mg/L in drinking water, the maximal daily consumption of xylenes from drinking water would be 0.04 mg/kg/day(1).

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

>> 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.

>> 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.

>> Product: 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. Contact a licensed professional waste disposal service to dispose of this material; Contaminated packaging: Dispose of as unused product.

>> p-Xylene is a waste chemical stream constituent which may be subjected to ultimate disposal by controlled incineration.

>> Xylene is a waste chemical stream constituent which may be subjected to ultimate disposal by controlled incineration.

14. Transport Information

DOT

p-Xylene
3
UN Pack Group: III
Reportable Quantity of 100 lb or 45

IATA

p-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.

>> p-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. p-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, 1,4-dimethyl-

REACH Registered Substance

>> Status: Active Update: 19-01-2023 https://echa.europa.eu/registration-dossier/-/registered-dossier/15791

New Zealand EPA Inventory of Chemical Status

>> Benzene, 1,4-dimethyl-: HSNO Approval: HSR001048 Approved with controls

16. Other Information

Other Safety Information

Chemical Assessment

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

>> IMAP assessments - Benzene, 1,4-dimethyl-: Environment tier I assessment