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Safety Data Sheet

1. Chemical product and company identification

Product name	:	p-Xylene

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	46007
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity (inhalation:vapors)	Category 4
	Skin corrosion/irritation	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (single exposure)	Category 3 (respiratory tract irritation.)
	Aspiration hazard	Category 1
Environmental hazards	Aquatic acute	Category 2
	Aquatic chronic	Category 2

Hazard pictograms

Signal word	:	Danger
Hazard statements	:	Flammable liquid and vapor May be fatal if swallowed and enters airways Causes skin irritation Harmful if inhaled May cause respiratory irritation May cause drowsiness or dizziness Suspected of damaging fertility or the unborn child Causes damage to organs (central nervous system) Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep container tightly closed.
Ground and bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take action to prevent static discharges.
Do not breathe mist/vapors.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF ON SKIN: Wash with plenty of water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Call a POISON CENTER or doctor.
IF exposed or concerned: Get medical advice/attention.
Call a POISON CENTER or doctor if you feel unwell.
Do not induce vomiting.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Collect spillage.

Storage : Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Synonyms : 4-Dimethylbenzene

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
p-Xylene	≥ 95	C8H10	Listed	203-396-5	106-42-3

4. First aid measures

First aid measures

First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle. If necessary, get medical treatment.

First-aid measures after skin contact	:	Wash the affected areas under running water.
First-aid measures after eye contact	:	Wash the affected areas under running water.
First-aid measures after ingestion	:	The chemical is volatile. Do not induce vomiting because it increases the risk of aspiration into the lungs. Get medical attention immediately. If necessary, rinse mouth with water.
Personal Protection in First Aid and Measures	:	Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Suitable extinguishing media	:	Dry chemical powder, carbon dioxide, dry sand, foam
Unsuitable extinguishing media	:	Water spray
Firefighting instructions	:	Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area. Fight fire from windward. Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.
Personal protection (Emergency response)	:	Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures	:	Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid damage to the environment by flowing of spillage to rivers.

Methods and Equipment for Containment and Cleaning up

For containment	:	Absorb spill with inert material (e.g, diatomaceous earth, sand) and flush spillage area with copious amounts of water.
Prevention Measures for Secondary Accidents	:	Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures	:	Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Fire is strictly prohibited. Ventilate well at working places.
Precautions for safe handling	:	Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas. Do not allow contact with oxidizing substances.

Storage

Storage conditions	:	Store in a dark, cool place and tightly closed.
Material used in packaging/containers	:	Glass, fluorine resin, stainless steel. Do not use vinyl chloride resin, acrylic resin, polystyrene etc.

8. Exposure controls / Personal protection equipment

ACGIH TWA	20 ppm

Appropriate engineering controls	:	Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection	:	Chemical cartridge respirator with an organic vapor cartage or airline respirator
Hand protection	:	Organic solvents resistant gloves
Eye protection	:	Safety goggles
Skin and body protection	:	Protective clothing, protective boots

9. Physical and chemical properties

Physical state	:	Liquid
Color	:	Colorless.
Odor	:	Pungent.
pH	:	Neutral
Melting point	:	13.263 ° C
Freezing point	:	No data available
Boiling point	:	138.351 ° C
Flash point	:	25 ° C (C.C.)
Auto-ignition temperature	:	529 ° C
Decomposition temperature	:	No data available
Flammability	:	Flammable
Vapor pressure	:	8.2 hPa (20℃)
Relative density	:	No data available
Density	:	0.858 - 0.862 g/cm³ (20℃)
Relative gas density	:	3.66
Solubility	:	Organic solvents; Freely soluble in methanol, ethanol. Water: 0.02 % (25℃)
Partition coefficient n-octanol/water (log Pow)	:	3.15
Explosive limits (vol %)	:	1.1 - 6.6 vol %
Viscosity, kinematic	:	0.7 mm²/s (25℃)
Particle characteristics	:	No data available

10. Stability and reactivity

Reactivity	:	May react with oxidizing substances.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable under normal conditions of use.
Conditions to avoid	:	Light, heat.

Incompatible materials	:	Oxidizing substances.
Hazardous decomposition products	:	Carbon monoxide.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50=4029mg/kg
Acute toxicity (dermal)	:	Classification not possible
Acute toxicity (inhalation)	:	No classification (gas) Harmful if inhaled (vapor) rat LC50=4550ppm/4h Classification not possible (dust, mist)
Skin corrosion/irritation	:	Causes skin irritation Based on a report that this substance was irritating in a skin irritation test with rabbits exposed to 0.5 ml of this substance for 4 hours, this substance was classified into category 2.
Serious eye damage/irritation	:	Classification not possible May cause eye irritation.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	Classification not possible
Germ cell mutagenicity	:	No classification As for in vivo data, a micronucleus test with bone marrow cells of mice dosed intraperitoneally was negative. As for in vitro data, bacterial reverse mutation tests were negative.
Carcinogenicity	:	No classification ACGIH classifies xylene (all isomers) as A4(not classifiable as a human carcinogen).
Reproductive toxicity	:	Suspected of damaging fertility or the unborn child As for an inhalation route, it was reported that in a study in which pregnant rats were exposed by inhalation (24 hours/day) to this substance during the organogenesis period, reduced fetal body weights, reduced litter sizes, and extra ribs were observed at a dose (3000 mg/m3) at which the dams showed reduced food consumption or reduced serum sex hormone levels. On the other hand, it is reported that in another study in which pregnant rats were exposed at up to 7000 mg/m3 for 6 hours/day during the organogenesis period, reduced body weight gains in the dams but no adverse effects in the fetuses were observed. In addition, it is reported that in a study in which pregnant rabbits were exposed by inhalation at up to 1000 mg/m3 for 24 hours/day during the organogenesis period, mortality and abortion in the dams but no effects in the fetuses were observed. From the above, it was classified into category 2.

STOT-single exposure	:	Causes damage to organs (central nervous system) May cause drowsiness or dizziness May cause respiratory irritation This substance is irritating to the respiratory tract. As for human cases, dizziness was observed in four of six volunteers exposed to this substance by inhalation. For experimental animals, it is reported that inhalation exposure (doses corresponding to category 1) caused incoordination, tremors, reduced axonal transport, and at higher doses, narcotic effects; additionally, while the route(s) of exposure, doses, etc. are not known, tremors, biphasic central nervous system response (depression and excitement), and gastrointestinal-tract damage were reported as toxic symptoms of this substance. From the above, it was classified into category 1 (central nervous system), category 3 (respiratory tract irritation, narcosis).
STOT-repeated exposure	:	Classification not possible There was no information on the adverse effects of human exposure to this substance alone. However, with regard to mixtures containing p-xylene, there are reports on effects on the nervous system, respiratory organs, and haemal system in humans. It is written in a part of the reports that these effects were caused by combined exposure including exposure to other solvents such as benzene, toluene, and ethylbenzene. Therefore, these effects could not be regarded as the effects of exposure to mixed xylenes alone. Meanwhile, for experimental animals, in a 10-day oral administration study with rats dosed by gavage, increased liver weights were observed at 250 mg/kg/day, but associated findings to suggest hepatic toxicity were not detected in blood chemistry test values, histological changes, etc.. Therefore, including the description above, there was no data on adverse effects in experimental animals that could be used for the classification of this substance. From the above, information on both humans and experimental animals were lacking, for classification as the effects by exposure to this substance alone. As with the other isomers, this substance was classified as "Classification not possible" due to lack of data.
Aspiration hazard	:	May be fatal if swallowed and enters airways This substance is a hydrocarbon with a calculated kinematic viscosity value of 0.7 mm2sec (25℃), and was therefore classified into category 1.

12. Ecological information

Ecotoxicity

Aquatic acute	:	Toxic to aquatic life Crangon franciscorum LC50=1.7mg/L/96h
Aquatic chronic	:	Toxic to aquatic life with long lasting effects

Persistence and degradability

Not readily biodegradable
BOD : 38%

Bioaccumulative potential

Low bioconcentration
BCF : 56

Mobility in soil

Moderate mobility
Koc : 246-540

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	1307
Proper Shipping Name (IMDG)	:	XYLENES
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	3

Air transport(IATA)

UN-No. (IATA)	:	1307
Proper Shipping Name (IATA)	:	Xylenes
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	3
Marine pollutant	:	Applicable
MFAG-No	:	130

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .
Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) .
Dangerous Properties of Industrial Materials,6th ed. N.I.Sax Van Nostrand Reinhold Company (1984) .
Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) .
Handbook of 17322 Chemical Products, The Chemical Daily Co. (2022) .

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.