

Safety Data Sheet

1. Product and company identification

Product name : Xylene
Name of manufacturer : KANTO CHEMICAL CO., INC.
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Name of section : Electronic materials division technical department
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SDS No. : GE00024

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable liquids : Category 3
Pyrophoric liquids : Out of category

Human health hazard

Acute toxicity(oral) : Out of category
Acute toxicity(dermal)
: Category 4
Acute toxicity(inhalation:vapors)
: Category 4

Skin corrosion/irritation

: Category 2

Serious eye damage/eye irritation

: Category 2A

Carcinogenicity : Category 2

Reproductive toxicity

: Category 1B

Specific target organ systemic toxicity(single exposure)

: Category 1 , Category 3 (anesthetic action)

Specific target organ systemic toxicity(repeated exposure)

: Category 1

Aspiration hazard : Category 1

Environmental hazard

Hazardous to the aquatic environment-acute hazard

: Category 2

Hazardous to the aquatic environment-chronic hazard

: Category 2

Pictogram or symbol



- Signal word : Danger
- Hazard statement : Flammable liquid and vapor
Harmful in contact with skin
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer
May damage fertility or the unborn child
Causes damage to organs (respiratory organs, liver, central nervous system, kidney)
May cause drowsiness and dizziness
Causes damage to organs (respiratory organs, nervous system) through prolonged or repeated exposure
May be fatal if swallowed and enters airways
Toxic to aquatic life
Toxic to aquatic life with long lasting effects
- Cautions
- Safety measurements : Do not handle until all safety precautions have been read and understood.
Keep away from ignition sources such as heat, sparks, or open flame.
Keep containers tightly closed.
Ground container and receiving equipment in case of transport and stirring.
Use explosion-proof apparatus.
Use only non-sparking tools.
Do not breathe dust, mist, and vapor.
Use only in a well-ventilated area.
Avoid release to the environment.
Do not eat, drink or smoke when using this product.
Wear appropriate protective gloves, glasses, clothing, face shield, or mask.
Wash protective equipment thoroughly after use.
Wash hands thoroughly after handling.
- First-aid measures : If inhaled : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical treatment if you feel unwell.

If swallowed: Rinse mouth, do not induce vomiting. Immediately get medical treatment.
If in eyes : Rinse cautiously with water for several minutes. Get medical treatment.
If on skin : Remove contaminated clothing and the substance. Get medical treatment, if you feel unwell.
Wash hands thoroughly after handling.
If exposed, get medical treatment.
Get medical treatment, if you feel unwell.
Collect leakage

Storage : Tightly container closed and store in a well-ventilated area.
Store locked up.
Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

Substance/Mixture : Substance
Chemical name or commercial name : Mixture of o-Xylene, m-Xylene, p-Xylene and Ethylbenzene
Ingredients and composition : Mixed xylene (Mixture of o-Xylene, m-Xylene, p-Xylene and Ethylbenzene) min. 96%
Xylene, (as mixture of o-, m-, p-) 85%
Ethylbenzene 15%
Chemical formula : Xylene C₆H₄(CH₃)₂
Ethylbenzene C₆H₅C₂H₅
CAS No. : Xylene 1330-20-7
Ethylbenzene 100-41-4
TSCA Inventory : Xylene Registered
Ethylbenzene Registered
EINECS No. : Xylene 2155357
Ethylbenzene 2028494
Dangerous and hazardous ingredients : Xylene, Ethylbenzene

4. First aid measures

Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
Skin contact : Wash the affected areas under running water.
Eye contact : Wash the affected areas under running water for at least 15 minutes.
Get medical treatment.
Ingestion : Rinse mouth with water. Give the victim one or two glasses of water or milk. Get medical attention as soon as possible. Do not induce vomiting. Do not give an unconscious victim anything to drink.

Protection for first aid person

: Rescuers should wear proper protective equipment like rubber gloves, goggles.

5. Fire fighting measures

Extinguishing media : Dry chemical powder, carbon dioxide, dry sand, foam
Prohibited extinguishing media : Water spray
Particular fire fighting : 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.

Protection for firefighters

: Firefighters should wear protective equipment.

6. Accidental release measures

Cautions for personnel : 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.

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

Removal measure : Absorb spill with inert material (e.g., diatomaceous earth, sand) and flush spillage area with copious amounts of water.

Prevention of second accident

: Remove nearby sources of ignition and prepare extinguishing media.

7. Cautions of handling and storage

Handling

Engineering measures : Wear proper protective equipment to avoid contact with skin or inhalation of vapor. Pay attention to fire.

Cautions for safety handling

: Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Storage

Adequate storage condition

: Store in a dark, cool place and tightly closed.

Safety adequate container materials

: Glass, fluorine resin, stainless steel

Do not use polyvinyl chloride resin, acryl resin.

8. Exposure control/Personal protection

Engineering measures : Use with an enclosed system or a local exhaust ventilation.

Control parameters

ACGIH(2015) : 100ppm(as xylene) (TLV-TWA)

150ppm(as xylene) (TLV-STEL)

20ppm(as ethylbenzene) (TLV-TWA)

Protective equipment

Respiration protective equipment

: Chemical cartridge respirator with an organic vapor cartage or airline respirator

Hands protective equipment

: Organic solvents resistant gloves

Eyes protective equipment

: Safety goggles

Skin and body protective equipment

: Protective clothing, protective boots

9. Physical and chemical properties

Appearance : Liquid
Color : Colorless
Odor : Characteristic odor
Boiling point : 139.1°C (as m-xylene)
Melting point : -47.89°C
Flash point : 23.2°C
Auto-ignition point : 563°C
Explosion characteristics
Explosion limit : upper : 7.0vol% lower : 1.1vol%
Vapor pressure : 8.0hPa(20°C)
Vapor density : 3.7
Density : 0.860-0.870g/cm³ (20°C)
Solubility
Solubility in solvents : Water : 0.02% (20°C)
Organic solvents : Soluble in acetone, ethanol, diethyl ether.
log Pow : 3.2

10. Stability and reactivity

Stability : Stable under normal conditions.
Reactivity : May react with oxidizing substances.
Incompatible conditions : Light, heat
Incompatible materials : Oxidizing substances
Hazardous decomposition products
: Carbon monoxide

11. Toxicological information

Acute toxicity : Oral : Out of category
Harmful in case of contact with skin(category 4)
Harmful if inhaled(vapor) (category 4)
Inhalation(dust, mist) : Not possible to classify because of insufficient data.
rat oral LD50=3500mg/kg
rabbit skin LD50=1700mg/kg
rat Inhalation LC50=6350ppm/4H(vapor)
Skin corrosion/irritation : Causes skin irritation(category 2)
Since moderately irritation was observed in rabbit skin irritation tests, it was classified into category 2.
Serious eye damage/eye irritation
: Causes serious eye irritation(category 2A)
Since moderately irritation was observed in rabbit eye irritation tests, it was classified into category 2A.
Respiratory sensitization or Skin sensitization
: Respiratory sensitization : Not possible to classify because of insufficient data.

- Skin sensitization : Not possible to classify because of insufficient data.
- Mutagenicity : Not possible to classify because of insufficient data.
Xylene is negative on human multi-generation epidemiological test and somatic cell mutagenicity tests in vivo (micronucleus/chromosome tests). Also, ethylbenzene is negative in somatic cell in mutagenicity tests in vivo (micronucleus).
- Carcinogenic effects : Suspected of causing cancer (category 2)
Xylene is classified into group 3(not classifiable as to its carcinogenicity to humans) by IARC, however, since ethylbenzene is classified into group 2B(probably carcinogenic to humans with less sufficient evidence) by Japan Society for Occupational Health, it was classified into category 2.
- Effects on the reproductive system
: May damage fertility or the unborn child(category 1B)
Xylene: Based on the evidence of weight reduction and hydrocephalus in fetuses at dosing levels not toxic to parent animals in mouse developmental toxicity tests.
Ethylbenzene: Based on the description of mice/rat teratogenicity tests: Toxic effects on the embryo (urinary malformation) are observed at dosing levels not toxic to maternal animals.
Thus, the substance was classified into category 1B.
- Specific target organ systemic toxicity single exposure
: Cause damage to organs (respiratory organs, liver, central nervous system, kidneys) (category 1)
May cause drowsiness and dizziness(category 3)
Xylene containing ethylbenzene: Based on the human evidence including "throat irritation, severe pulmonary congestion, alveolar hemorrhage, pulmonary edema, congestion accompanying hepatomegaly, centrilobular vacuolation of hepatocytes, nerve cell damage associated with dot hemorrhage, swelling and disappearance of Nissl bodies, limb cyanosis, a transient increase in serum transaminase activity, an increase in the blood level of urea, a decrease in endogenous creatinine clearance in the urine, liver damage, severe kidney damage, amnesia, coma" and the evidence from animal studies including "strong narcotic effect". Thus, the substance was classified into category 1 (respiratory organs, liver, central nervous system, kidney) and category 3 (anesthetic actions).
- Specific target organ systemic toxicity repeated exposure
: Cause damage to organs (respiratory organs, nervous system) through prolonged or repeated exposure(category 1)
Xylene containing ethylbenzene: Based on the human evidence including "eye/nose irritation, thirst" and "chronic headache, chest pain, abnormal electroencephalogram, dyspnea, cyanosis of the hands, fever, a decrease in WBC count, discomfort, impairment of pulmonary function, a decrease in working capacity, physical/mental disorders". Thus, the substance was classified into category 1 (respiratory organs, nervous system).
- Aspiration hazard : May be fatal if swallowed and enters airways(category 1)
The substance (mixture of isomers) is a hydrocarbon and is considered to have a low kinematic viscosity (kinematic viscosity of o-, m-, and p-xylene: 0.86, 0.67, and 0.70 mm²/s(25°C), respectively). Thus, the substance was classified into category 1.

12. Ecological information

Ecotoxicity

- Fish toxicity : Toxic to aquatic life(category 2)

Toxic to aquatic life with long lasting effects(category 2)
(as xylene)

Fish (rainbow trout) LC50=3.3mg/L/96H

Persistence and degradability

: Xylene has high biodegradability.
39% by BOD

Bioaccumulative potential : Not available

Mobility in soil : From the physical-chemical properties, xylene is able to be moved to air, water system, the soil environment.

13. Disposal consideration

Residual disposal : Burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.

Containers : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class : Class 3(Flammable liquids) P. G. III

UN number : 1307

Marine regulation information

UN No. : 1307

Proper shipping name : XYLENES

Class : 3

Sub risk : -

Packing group : III

Marine pollutant : P

Aviation regulation information

UN No. : 1307

Proper shipping name : Xylenes

Class : 3

Sub risk : -

Packing group : III

15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

References

Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985)

Solvents Handbook, T, Asahara et al, Kodansha Scientific Ltd. (1976)

Registry of Toxic Effects of Chemical Substances (RTECS) 1985-86 ed. National Instituted for Occupational Safety and Health(1987)

Handbook of 16817 Chemical Products, The Chemical Daily Co. (2017)

Handbook of Poisonous and Deleterious substances, revised and enlarged edition, Yakumu Kohosa (2000)

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, and it has the same required elements on the Material Safety Data Sheet (MSDS) which is prepared based on JIS Z7250:2010.