Date of issue: 2018/08/21
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Safety Data Sheet

Section 1. Identification of the substance/mixture and of the company/undertaking

Product identifier:
Product name: Xylene
SDS No. : 86142E-5
Relevant identified uses of the substance or mixture and uses advised against
Research and Development
Details of the supplier of the safety data sheet
Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
Division: Chemical Safety Management Department
Telephone number: +81-6-6946-8061
FAX: +81-6-6946-1607

Section 2. Hazards identification

GHS classification and label elements of the product
Classification of the substance or mixture
PHYSICAL AND CHEMICAL HAZARDS
Flammable liquids: Category 3
HEALTH HAZARDS
Acute toxicity (Dermal): Category 4
Acute toxicity (Inhalation): Category 4
Skin corrosion/irritation: Category 2
Serious eye damage/eye irritation: Category 2
Carcinogenicity: Category 2
Reproductive toxicity: Category 1A
Reproductive toxicity - effects on or via lactation: Additional category
Specific target organ toxicity - single exposure: Category 1 (liver, central nervous system, respiratory system, kidneys)
Specific target organ toxicity - single exposure: Category 3 (Narcotic effects)
Specific target organ toxicity - repeated exposure: Category 1 (auditory organ, nervous system, respiratory system)
Aspiration hazard: Category 1
ENVIRONMENT HAZARDS
Hazardous to the aquatic environment, short-term (acute): Category 2
Hazardous to the aquatic environment, long-term (chronic): Category 2
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

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
May cause harm to breast-fed children
Causes damage to organs (liver, central nervous system, respiratory system, kidneys)
May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure (auditory organ, nervous system, respiratory system)
May be fatal if swallowed and enters airways
Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.
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 non-sparking tools.
Take action to prevent static discharges.
Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media to extinguish.
Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Flammable liquid. Vapor/air mixture may explode.

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:o-,m-,p-Xylene
Content (%):80(min)
Chemical formula:C24H30

Chemicals No, Japan:3-3; 3-60
CAS No.:1330-20-7
MW:106.16
Note : The figures shown above are not the specifications of the product.
Impurities
Ethylbenzene ≦20% (CAS No. 100-41-4)
Toluene <1.0% (CAS No. 108-88-3)

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.
Do NOT induce vomiting.
Immediately call a POISON CENTER/doctor/physician.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment
Sprinkler equipment
Dry-powder firefighting equipment - other (except for phosphate etc.,hydrogen carbonate etc.)
Straight stream water extinguisher
Water mist extinguisher
Reinforcing liquid jet extinguisher
Dry-powder extinguisher - other (except for phosphate etc.,hydrogen carbonate etc.)
Bucket of water or tank of water

Specific hazards arising from the substance or mixture

Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face peace operated

positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

Section 7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Stainless steel

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(o-,m-,p-Xylene)
ACGIH(2021) TWA: 20ppm (Eye & URT irr; hematologic eff; ototoxicity; CNS impair)
(Ethylbenzene)
ACGIH(2021) TWA: 20ppm
(URT & eye irr; ototoxicity; kidney eff; CNS impair)
(Toluene)
ACGIH(2020) TWA: 20ppm (CNS, visual, & hearing impair; female repro system eff; pregnancy loss)

Notation

(o-,m-,p-Xylene)
OTO
(Ethylbenzene)
OTO
(Toluene)
OTO

OSHA-PEL

(Ethylbenzene)
TWA: 100ppm, 435mg/m3
(Toluene)
TWA: 200ppm; STEL: C 300ppm
Acceptable maximum peak: 500ppm; Maximum Duration: 10min
(o-,m-,p-Xylene)
TWA: 100ppm, 435mg/m3

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.
Eye wash station should be available.
Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid
Color: Colorless, Clear
Odor: Characteristic odor
Melting point/Freezing point data is not available.
Boiling point or initial boiling point data is not available.
Boiling range data is not available.
Flammability (gases, liquids and solids) data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Flash point: 24.5～32.5℃
Auto-ignition temperature data is not available.
Decomposition temperature data is not available.

pH data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: Insoluble
n-Octanol/water partition coefficient data is not available.
Vapor pressure data is not available.
Density and/or relative density: 0.86-0.87 g/ml(20℃)
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity
Not available.
Chemical stability
Stable under normal storage/handling conditions.
Possibility of hazardous reactions
(o-,m-,p-Xylene)
As a result of flow, agitation, etc., electrostatic charges can be generated.
Reacts with strong acids and strong oxidants. (ICSC 0084,0085,0086)
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
Strong acids, Strong oxidizing agents
Hazardous decomposition products
Carbon oxides

Section 11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
rat LD50=3500 - 8800mg/kg (NITE risk assessment, 2008)
(Ethylbenzene)
rat LD50=3500-4700mg/kg (AICIS IMAP, 2020)
Acute toxicity (Dermal)
[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
rabbit LD50=1700mg/kg (EPA Pesticide, 2005)
(Ethylbenzene)
rabbit LD50=15400mg/kg (ACGIH, 2011)
Acute toxicity (Inhalation)
[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
vapor: rat LC50=6350-6700ppm/4hr (NITE Initial Risk Assessment Report, 2008)
(Ethylbenzene)
vapor: rat LC50=4000ppm/4hr (OEL Documentations (JSOH), 2020)
mist: rat LC50=55mg/L/2hr (cal.: 27.5mg/L/4hr) (MOE Result of the initial environmental

risk assessment of chemicals, 2015)
(Toluene)
vapor: rat LC50=3319-8800ppm/4hr (EU-RAR, 2003) et al.

Irritant properties

Skin corrosion/irritation

[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
rabbit erythema, edema, necrosis (CERI/NITE Hazard Assessment Report, 2008)
(Toluene)
rabbit moderate irritation (EU-RAR, 2003)

Serious eye damage/irritation

[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
rabbit mild to moderate irritation (CERI/NITE Hazard Assessment Report, 2008)
(Ethylbenzene)
rabbit mild irritation (NITE Initial Risk Assessment Report, 2007 et al)
(Toluene)
rabbit slight eyes irritation (EU-RAR, 2003)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]
[GHS Cat. Japan, base data]
(Ethylbenzene)
cat.2; IARC Gr. 2B (IARC, 2000 et al.)
[IARC]
(o-,m-,p-Xylene)
Group 3 : Not classifiable as to its carcinogenicity to humans
(Ethylbenzene)
Group 2B : Possibly carcinogenic to humans
(Toluene)
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
(o-,m-,p-Xylene)
A4(2021) : Not Classifiable as a Human Carcinogen
(Ethylbenzene)
A3(2021) : Confirmed Animal Carcinogen with Unknown Relevance to Humans
(Toluene)
A4(2020) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[Data for components of the product]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
cat. 1B; ATSDR, 2007
(Ethylbenzene)
cat. 1B; Recommendation of Occupational Exposure Limits (JSOH), 2021; 2021; ACGIH 7th, 2011 et al.
(Toluene)
cat. add; SIDS(J), Access on Apr. 2012
(Toluene)
cat. 1A; NITE Initial Risk Assessment Report 87, 2006

Specific target organ toxicity (STOT)

STOT-single exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
liver, central nervous system, respiratory system, kidneys (CERI/NITE Hazard Assessment Report, 2008)
[cat.3 (respiratory tract irritation)]
[GHS Cat. Japan, base data]
(Ethylbenzene)
respiratory tract irritation (ACGIH, 2011; AICIS IMAP, 2020)
(Toluene)
respiratory tract irritation (PATTY 5th, 2001)
[cat.3 (narcotic effects)]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
narcotic effect (CERI/NITE Hazard Assessment Report, 2008)
(Ethylbenzene)
narcotic effect (ACGIH, 2011)
(Toluene)
narcotic effect (EHC 52, 1985; IARC 47, 1989)
STOT-repeated exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
nervous system, respiratory system (CERI/NITE Hazard Assessment Report, 2008)
(Ethylbenzene)
auditory organ, nervous system (JSOH OEL Documentations, 2020)
Aspiration hazard
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
cat. 1; kinematic viscosity=0.86(o-), 0.67(m-), 0.70(p-) mm2/s (25℃) (HSDB, 2014)
(Ethylbenzene)
cat. 1; hydrocarbon, kinematic viscosity=0.63 mm2/s (40℃) (CLH Report, 2010)
(Toluene)
cat. 1; hydrocarbon, kinematic viscosity =0.86 mm2/s (40℃)

Section 12. Ecological Information

Toxicity
Aquatic toxicity
[Data for components of the product]
Hazardous to the aquatic environment, short-term (acute)
[GHS Cat. Japan, base data]
(o-,m-,p-Xylene)
Fish (rainbow trout) LC50=3.3mg/L/96hr (NITE Initial Risk Assessment, 2005)
(Ethylbenzene)
Crustacea (bayshrimp) LC50＝0.42mg/L/96hr (NITE Initial Risk Assessment Report, 2007)
(Toluene)
Crustacea (Ceriodaphnia dubia) EC50=3.78mg/L/48hr (NITE Initial Risk Assessment Report, 2006)

Hazardous to the aquatic environment, long-term (chronic)
[GHS Cat. Japan, base data]
(Ethylbenzene)
Crustacea (Ceriodaphnia reticulata) NOEC=0.956mg/L/7days (MOE Japan, 2015)
(Toluene)
Crustacea (Ceriodaphnia dubia) NOEC=0.74mg/L/7days (NITE Initial Risk Assessment Report, 2006)

Water solubility
(Ethylbenzene)
0.015 g/100 ml (20℃) (ICSC, 2007)
(Toluene)
none (ICSC, 2002)

Persistence and degradability
[Data for components of the product]
(o-,m-,p-Xylene)
Not rapidly degradable (BOD_Degradation : 39% (NITE Initial Risk Assessment Report, 2005))
(Ethylbenzene)
Not rapidly degradable (BOD_Degradation : 0% (MITI official bulletin, 1990))
(Toluene)
BOD_Degradation : 123% (METI existing chemical safety inspections)

Bioaccumulative potential
[Data for components of the product]
(o-,m-,p-Xylene)
log Pow=3.16 (PHYSPROP DB, 2005)
(Ethylbenzene)
log Kow=3.15 (PHYSPROP DB, 2005)
(Toluene)
log Kow=2.73 (PHYSPROP DB, 2008)

Mobility in soil
Mobility in soil data is not available.

Other adverse effects
Ozone depleting chemical data is not available.

Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods
Avoid release to the environment.
Dispose of contents/container in accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : 1307
UN Proper Shipping Name :
XYLENES
Class or division (Transport hazard class) : 3
Packing group : III
ERG GUIDE No.: 130
Special provisions No.: 223

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 1307
UN Proper Shipping Name :
XYLENES

Class or division (Transport hazard class) : 3
Packing group : III
Special provisions No.: 223

IATA (Dangerous Goods Regulations)
UN Number or ID Number : 1307
UN Proper Shipping Name :
XYLENES
Class or division (Transport hazard class) : 3
Hazard labels : Flamm.liquid
Packing group : III
Special provisions No.: A3

Environmental hazards
Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Noxious Liquid Substances ; Cat. Y
Ethylbenzene; o-,m-,p-Xylene; Toluene

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Ethylbenzene; Toluene; o-,m-,p-Xylene

Other regulatory information

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

Section 16. Other information

GHS classification and labelling

Flammable liquids, Category 3: H226 Flammable liquid and vapour
Acute toxicity, Category 4: H312 Harmful in contact with skin
Acute toxicity, Category 4: H332 Harmful if inhaled
Skin corrosion/irritation, Category 2: H315 Causes skin irritation
Serious eye damage/eye irritation, Category 2: H319 Causes serious eye irritation
Carcinogenicity, Category 2: H351 Suspected of causing cancer
Reproductive toxicity, Category 1A: H360 May damage fertility or the unborn child
Reproductive toxicity - effects on or via lactation, Additional category : H362 May cause harm to breast-fed children
STOT - single exposure, Category 1: H370 Causes damage to organs
STOT - single exposure, Category 3, Narcotic effects: H336 May cause drowsiness or dizziness.
STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
Aspiration hazard, Category 1: H304 May be fatal if swallowed and enters airways
Hazardous to the aquatic environment, short-term (acute), Category 2: H401 Toxic to aquatic life
Hazardous to the aquatic environment, long-term (chronic), Category 2: H411 Toxic to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.
The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.
The GHS classification data given here is based on current Japan official data (NITE published in 2021).