Date of issue: 2022/12/01
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Safety Data Sheet

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

Product identifier:
Product name: 2,6-Xylidine
SDS No. : 8632E-2
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 4
HEALTH HAZARDS
Acute toxicity (Oral): Category 4
Serious eye damage/eye irritation: Category 2
Carcinogenicity: Category 2
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure: Category 1 (blood)
Specific target organ toxicity - single exposure: Category 2 (nervous system)
Specific target organ toxicity - repeated exposure: Category 2 (blood, kidneys)
ENVIRONMENT HAZARDS
Hazardous to the aquatic environment, short-term (acute): Category 3
Hazardous to the aquatic environment, long-term (chronic): Category 3
(Note) GHS classification without description: Not classified/Classification not possible
Label elements

Signal word: Danger
HAZARD STATEMENT
H227 Combustible liquid
H302 Harmful if swallowed
H319 Causes serious eye irritation
H351 Suspected of causing cancer
H361 Suspected of damaging fertility or the unborn child
H370 Causes damage to organs (blood)
H371 May cause damage to organs (nervous system)
H373 May cause damage to organs through prolonged or repeated exposure (blood, kidneys)

H412 Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

P202 Do not handle until all safety precautions have been read and understood.

P273 Avoid release to the environment.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash contaminated parts thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P280 Use personal protective equipment as required.

P270 Do not eat, drink or smoke when using this product.

Response

P370 + P378 In case of fire: Use appropriate media to extinguish.

P314 Get medical advice/attention if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists: Get medical advice/attention.

P330 IF SWALLOWED: Rinse mouth.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.

Storage

P403 Store in a well-ventilated place.

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
2,6-Xylidine	99(min)	87-62-7	3-129	(CH3)2C6H3NH2

Note : The figures shown above are not the specifications of the product.

Impurities

2,3-Xylidine ≦0.40% (CAS No.87-59-2)

2,4-Xylidine ≦0.40% (CAS No.95-68-1)

2,6-Xylenol ≦0.10% (CAS No.576-26-1)

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

Take off immediately all contaminated clothing. Rinse skin with water or shower.

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.

Call a POISON CENTER/doctor/physician if you feel unwell.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

In case of fire, use spraying loaded liquid, foam (water-soluble liquid: alcohol-resistant foam), inactive gases, dry powder, dry sand to extinguish.

*Fire Service Act Group 4 Hazardous Materials

Unsuitable extinguishing media

Indoor Fire Plug System or Outdoor Fire Plug System

Sprinkler System

Dry Chemical Extinguishing System-Others (except for phosphates etc., Hydrogen Carbonates etc.)

Fire Extinguisher Discharging Jet Water/Spraying Water

Fire Extinguisher Discharging Jet Loaded Liquid

Fire Extinguisher Discharging Dry Extinguishing agents-Others (except for phosphates etc., Hydrogen Carbonates etc.)

Water Bucket or Water Tank

*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Group 4 Hazardous Materials

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

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 a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.
Ventilate area until material pick up is complete.
Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.
Avoid contact with eyes.

Safety Measures

Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands et al thoroughly after handling.
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.

Storage

Conditions for safe storage

Keep container tightly closed.
Store locked up. (P405)
Store in a cool, dry place. Do not store in direct sunlight.
Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Control value and Concentration standard value

(2,6-Xylidine)

Concentration standard value TWA: 0.5ppm
(2,3-Xylidine)
Concentration standard value TWA: 0.5ppm
(2,4-Xylidine)
Concentration standard value TWA: 0.5ppm
Adopted value
(2,6-Xylenol)
ACGIH(2019) TWA: 1ppm(IFV) (Hematologic & body weight eff)
[ACGIH] Notation
(2,6-Xylenol)
DSEN
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
Recommend to use protective equipment in conformity with the standards.
Use appropriate protective equipment in accordance with local/national regulation.
Respiratory protection
Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.
Hand protection
Wear impervious protective glove.
Eye protection
Wear eye/face protection. Wear safety goggles in cases gas is generated.
Skin and body protection
Wear protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties
Physical state: Liquid
Color: Colorless to yellow
Odor: Characteristic odor
Melting point/Freezing point: 11.2℃
Boiling point or initial boiling point: (2,6-Xylidine)215℃
Boiling range data is not available.
Flammability (gases, liquids and solids) data is not available.
Lower and upper explosion limit/flammability limit:
Lower explosion limit: 1.3 vol %
Upper explosion limit: 6.9 vol %
Flash point: (2,6-Xylidine)91℃
Auto-ignition temperature: (2,6-Xylidine)520℃
Decomposition temperature data is not available.
pH data is not available.
Kinematic viscosity data is not available.
Solubility:
Solubility in water: 0.7 g/100 ml (20℃)
Solubility in solvent data is not available.

n-Octanol/water partition coefficient: log Pow1.84
Vapor pressure: 0.02 kPa (20℃)
Density and/or relative density: 0.98
Relative vapor density (Air=1): 4.2
Particle characteristics data is not available.

Other information

Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The vapour is heavier than air.
Decomposes on burning. This produces toxic and corrosive fumes including nitrogen oxides.
Reacts violently with strong oxidants. Reacts with hypochlorites. This produces explosive chloroamines. Reacts with acids, acid anhydrides, acid chlorides and halogens. Attacks plastic and rubber. (ICSC 1519)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Acids, Strong oxidizing agents, Hypochlorites, Acid anhydrides, Acid chlorides, Halogens

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Chloroamines

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Product]

Category 4, Harmful if swallowed

[Data for components of the product]

[GHS Cat. Japan, base data]
(2,6-Xylidine)
rat LD50=630mg/kg (IARC 57, 1993)
(2,3-Xylidine)
rat LD50=930mg/kg (NITE Initial Risk Assessment Report No.208, 2005)
(2,4-Xylidine)
rat LD50=470mg/kg (ACGIH 7th, 2001)
(2,6-Xylenol)
rat LD50=296mg/kg (MOE risk assessment vol.5, 2006)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]
(2,3-Xylidine)
guinea pig LD50=500-1000mg/kg (NITE Initial Risk Assessment Report 208, 2005)

(2,6-Xylenol)
rat LD50=1000mg/kg (MOE risk assessment vol.5, 2006)
Acute toxicity (Inhalation)
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,4-Xylidine)
mist: rat LC50=1.53mg/L/4hr (DFGOT vol.19, 1998)
Irritant properties
Skin corrosion/irritation
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,3-Xylidine)
guinea pig severe irritation (CERI/NITE Hazard Assessment Report Ver.1.0 No.208, 2005)
(2,6-Xylenol)
corrosive (MOE risk assessment vol.5, 2006)
Serious eye damage/irritation
[Product]
Category 2, Causes serious eye irritation
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,6-Xylidine)
rabbit (OECD TG 405) recover on day 7or 8
(2,4-Xylidine)
(OECD TG) eyes irritation (DFGOT vol.19, 1998)
(2,6-Xylenol)
corrosive (MOE risk assessment vol.5, 2006)
Allergenic and sensitizing effects data is not available.
Mutagenic effects data is not available.
Carcinogenicity
[Product]
Category 2, Suspected of causing cancer
[Data for components of the product]
[GHS Cat. Japan, base data]
(2,6-Xylidine)
cat.2; IARC Gr. 2B (IARC 57, 1993)
[IARC]
(2,6-Xylidine)
Group 2B : Possibly carcinogenic to humans
(2,4-Xylidine)
Group 3 : Not classifiable as to its carcinogenicity to humans
[ACGIH]
(2,6-Xylenol)
A3(2019) : Confirmed Animal Carcinogen with Unknown Relevance to Humans
[EU]
(2,6-Xylidine)
Category 2; Substances suspected human carcinogens
Reproductive toxicity
[Product]
Category 2, Suspected of damaging fertility or the unborn child
[Data for components of the product]

[GHS Cat. Japan, base data]
(2,6-Xylidine)
cat. 2; MHLW test report, 2008

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]
Category 1, Causes damage to organs
Category 2, May cause damage to organs

[Data for components of the product]

[cat.1]
[GHS Cat. Japan, base data]
(2,6-Xylidine)
blood (ICSC, 2007; IARC vol.57, 1993)

[cat.2]
[GHS Cat. Japan, base data]
(2,6-Xylidine)
nervous system (MHLW report, 2008)

[cat.3 (respiratory tract irritation)]
[GHS Cat. Japan, base data]
(2,6-Xylenol)
respiratory tract irritation (HSDB, 2015)

[cat.3 (narcotic effects)]
[GHS Cat. Japan, base data]
(2,6-Xylenol)
narcotic effect (HSDB, 2015)

STOT-repeated exposure

[Product]
Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[cat.2]
[GHS Cat. Japan, base data]
(2,6-Xylidine)
blood, kidneys (MHLW report, 2008)

Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]
Category 3, Harmful to aquatic life
Category 3, Harmful to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)
[GHS Cat. Japan, base data]
(2,6-Xylidine)
Crustacea (Daphnia magna) EC50＝20mg/L/48hr; Fish (Oryzias latipes) LC50>98mg/L/96hr (MOE Results of Eco-toxicity tests of chemicals, 2002)
(2,3-Xylidine)
Crustacea (Daphnia magna) EC50＝8.9mg/L/48hr (ECETOC TR91, 2003)

(2,4-Xylidine)
Crustacea (Daphnia magna) EC50=9.9mg/L/48hr (Aquire, 2008)
(2,6-Xylenol)
Crustacea (Brine shrimp) LC50=2.2mg/L/48hr (NITE Initial Risk Assessment Report, 2008)
Hazardous to the aquatic environment, long-term (chronic)
[GHS Cat. Japan, base data]
(2,6-Xylidine)
Crustacea (Daphnia magna) NOEC=2.2 mg/L/21days (MOE Results of Eco-toxicity tests of chemicals, 2002)
(2,3-Xylidine)
Crustacea (Daphnia magna) NOEC=0.1mg/L/21days (CERI/NITE Hazard Assessment Report, 2005)
(2,6-Xylenol)
Crustacea (Daphnia magna) NOEC=0.538mg/L/21days (MOE Japan, 2006)

Water solubility
(2,6-Xylidine)
0.7 g/100 ml (20℃) (ICSC, 2007)
(2,3-Xylidine)
15 g/100 ml (20℃) (ICSC, 2007)
(2,4-Xylidine)
0.5 g/100 ml (20℃) (ICSC, 2007)

Persistence and degradability
[Data for components of the product]
(2,6-Xylidine)
Not rapidly degradable (BIOWIN)
(2,3-Xylidine)
Not rapidly degradable (BOD_Degradation : 3% (METI existing chemical safety inspections 1990)
(2,4-Xylidine)
BOD_Degradation : 0% (METI existing chemical safety inspections, 1978)
(2,6-Xylenol)
Not rapidly degradable (BOD_Degradation : 2%/28 days; HPLC_Degradation : 1%/28 days (Offical Bulletin of Economy, Trade and Industry 2003))

Bioaccumulative potential
[Data for components of the product]
(2,6-Xylidine)
log Pow=1.84 (ICSC, 2007)
(2,3-Xylidine)
log Pow=2.17 (ICSC, 2007)
(2,4-Xylidine)
log Pow=1.68 (ICSC, 2007)
(2,6-Xylenol)
log Pow=2.36 (PHYSPROP DB, 2005)

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 as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : 1711
UN Proper Shipping Name :
XYLIDINES, LIQUID
Class or division (Transport hazard class) : 6.1
Packing group : II
ERG GUIDE No.: 153

IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 1711
UN Proper Shipping Name :
XYLIDINES, LIQUID
Class or division (Transport hazard class) : 6.1
Packing group : II

IATA (Dangerous Goods Regulations)
UN Number or ID Number : 1711
UN Proper Shipping Name :
XYLIDINES, LIQUID
Class or division (Transport hazard class) : 6.1
Hazard labels : Toxic
Packing group : II

Environmental hazards
Marine pollutants (yes/no) : no

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
2,3-Xylidine; 2,6-Xylidine; 2,4-Xylidine; 2,6-Xylenol

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

Section 16. Other information

References and sources for data
Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN
IMDG Code, 2022 Edition (Incorporating Amendment 41-22)
IATA Dangerous Goods Regulations (65th Edition) 2024
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2024 TLVs and BEIs. (ACGIH)
JIS Z 7252 : 2019

JIS Z 7253 : 2019
2023 Recommendation on TLVs (JSOH)
Supplier's data/information

General Disclaimer

All chemicals have unknown hazard. Handle the product with care.
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 2022).