



## Safety Data Sheet

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

Product identifier:

Product name: Pyridine

SDS No. : 6551E-3

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

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### 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 2

HEALTH HAZARDS

Acute toxicity (Oral): Category 4

Acute toxicity (Dermal): Category 4

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Carcinogenicity: 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 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3 (Narcotic effects)

Specific target organ toxicity – repeated exposure: Category 1 (blood system, liver, central nervous system, kidneys)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 1

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Harmful if swallowed

Harmful in contact with skin

Harmful if inhaled

Causes severe skin burns and eye damage



Suspected of causing cancer  
Suspected of damaging fertility or the unborn child  
Causes damage to organs (central nervous system)  
May cause respiratory irritation  
May cause drowsiness or dizziness  
Causes damage to organs through prolonged or repeated exposure (blood system, liver, central nervous system, kidneys)  
May be fatal if swallowed and enters airways  
Very 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.  
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 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**

Highly flammable liquid. Vapor/air mixture may explode.

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**Section 3. Composition/information on ingredients****Mixture/Substance selection:****Substance**

Ingredient name:Pyridine  
Content (%):99(min)  
Chemical formula:C<sub>5</sub>H<sub>5</sub>N  
Chemicals No, Japan:5-710  
CAS No.:110-86-1



MW:79.10

ECNO:203-809-9

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

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**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.

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**Section 5. Fire-fighting measures****Extinguishing media****Suitable extinguishing media**

In case of fire, use water mist, 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.

Runoff from fire control or dilution water may cause pollution.

**Advice for firefighters****Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Cool container with water spray.

**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 piece operated positive pressure mode.



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**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.

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**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.

**Container and packaging materials for safe handling**

Glass

Iron



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**Section 8. Exposure controls/personal protection**

## Control parameters

## Adopted value

(Pyridine)

ACGIH(2004) TWA: 1ppm (Skin irr; liver &amp; kidney dam)

## OSHA-PEL

(Pyridine)

TWA: 5ppm, 15mg/m<sup>3</sup>

## 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.

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**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: -42°C

Boiling point or initial boiling point: (Pyridine)115°C

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: 1.8 vol %

Upper explosion limit: 12.4 vol %

Flash point: (Pyridine)(C.C.) 20°C

Auto-ignition temperature: (Pyridine)482°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Miscible

n-Octanol/water partition coefficient: log Pow0.65

Vapor pressure: 2.0 kPa (20°C)

Density and/or relative density: 0.98

Relative vapor density (Air=1): 2.73

Relative density of the Vapor/air - mixture at 20°C (Air = 1): 1.03

Particle characteristics data is not available.



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**Section 10. Stability and Reactivity****Reactivity**

Not available.

**Chemical stability**

Hygroscopic substance.

**Possibility of hazardous reactions**

The vapour is heavier than air and may travel along the ground; distant ignition possible.

Decomposes on burning. This produces toxic fumes of nitrogen oxides and hydrogen cyanide.

Reacts violently with strong oxidants and strong acids. This generates fire and explosion hazard. The substance is a weak base. (ICSC 0323)

**Conditions to avoid**

Contact with incompatible materials.

Contact with fire source.

**Incompatible materials**

Strong acids, Strong oxidizing agents

**Hazardous decomposition products**

Nitrogen oxides, Hydrogen cyanide

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**Section 11. Toxicological Information****Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

rat LD50=891mg/kg (AICIS IMAP, 2015)

**Acute toxicity (Dermal)**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

rabbit LD50=1120mg/kg (ACGIH 7th, 2004) et al.

**Acute toxicity (Inhalation)**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

vapor: rat LC50=4900ppm/4hr (MHLW Risk Assessment Report, 2018 et al.) < 90% of saturated vapor press. conc. (27371ppm)

**Irritant properties****Skin corrosion/irritation**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

rabbit corrosive (ACGIH 7th, 2004) et al.

**Serious eye damage/irritation**

[Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

skin corrosion/irritation cat.1 (MHLW/MOE GHS classification results); severe damage (ACGIH 7th, 2004)

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]

(Pyridine)

cat.2; IARC Gr. 2B (IARC 119, 2019) et al.

[IARC]

(Pyridine)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(Pyridine)

A3(2004) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

## Reproductive toxicity

## [Data for components of the product]

[GHS Cat. Japan, base data]

(Pyridine)

cat. 2; REACH Registration dossier, Access on June 2020

## Specific target organ toxicity (STOT)

## STOT-single exposure

## [Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Pyridine)

central nervous system (AICIS IMAP, 2015; NITE Initial Risk Assessment Report, 2007)

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Pyridine)

respiratory tract irritation (MHLW Public Notice No. 33, 1996)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Pyridine)

narcotic effect (MHLW Risk Assessment Report, 2018; NITE Initial Risk Assessment Report, 2007)

## STOT-repeated exposure

## [Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Pyridine)

blood system, liver, central nervous system, kidneys (NITE Initial Risk Assessment Report, 2007)

## Aspiration hazard

## [Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Pyridine)

cat. 1; NITE Initial Risk Assessment Report, 2007; HSDB, Access on Aug. 2017

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**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]

(Pyridine)

Algae (*Pseudokirchneriella subcapitata*) ErC50=0.10mg/L/72hr (MOE Results of Eco-toxicity)



tests of chemicals, 1995)  
Hazardous to the aquatic environment, long-term (chronic)  
[GHS Cat. Japan, base data]  
(Pyridine)  
Algae (Pseudokirchneriella subcapitata) NOEC=0.010mg/L/72hr (MOE Results of Eco-toxicity tests of chemicals, 1995)

Water solubility  
(Pyridine)  
miscible (ICSC, 2000)

Persistence and degradability  
[Data for components of the product]  
(Pyridine)  
Rapidly degradable (BOD\_Degradation: 92%, 94%, 0% (av. 62%)/4 weeks (METI Existing Chemical Substances Safety Inspections Data, 1998))

Bioaccumulative potential  
[Data for components of the product]  
(Pyridine)  
log Kow=0.65 (SRC PHYSPROP DB, 2017)

Mobility in soil  
Mobility in soil data is not available.

Other adverse effects  
Ozone depleting chemical data is not available.

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#### 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.

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#### Section 14. Transport Information

UN Number or ID Number : 1282

UN Proper Shipping Name :

PYRIDINE

Class or division (Transport hazard class) : 3

Packing group : II

ERG GUIDE No.: 129

##### IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1282

UN Proper Shipping Name :

PYRIDINE

Class or division (Transport hazard class) : 3

Packing group : II

##### IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1282

UN Proper Shipping Name :

PYRIDINE

Class or division (Transport hazard class) : 3

Hazard labels : Flamm.liquid

Packing group : II

##### 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

Pyridine

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#### 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

Pyridine

Other regulatory information

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

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#### Section 16. Other information

GHS classification and labelling

Flammable liquids, Category 2: H225 Highly flammable liquid and vapour

Acute toxicity, Category 4: H302 Harmful if swallowed

Acute toxicity, Category 4: H312 Harmful in contact with skin

Acute toxicity, Category 4: H332 Harmful if inhaled

Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage

Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage

Carcinogenicity, Category 2: H351 Suspected of causing cancer

Reproductive toxicity, Category 2: H361 Suspected of damaging fertility or the unborn child

STOT – single exposure, Category 1: H370 Causes damage to organs

STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.

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 1: H400 Very toxic to aquatic life

Hazardous to the aquatic environment, long-term (chronic), Category 1: H410 Very 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



**KISHIDA**

Pyridine,6551E-3,2023/02/01

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