



## Safety Data Sheet

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

Product identifier:

Product name: Furfuryl alcohol

SDS No. : 3286E-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 4

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Acute toxicity (Dermal): Category 3

Acute toxicity (Inhalation): Category 2

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Skin sensitization: Category 1

Carcinogenicity: Category 2

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 (respiratory system)

Specific target organ toxicity – repeated exposure: Category 2 (liver, kidneys)

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H227 Combustible liquid

H301 Toxic if swallowed

H311 Toxic in contact with skin

H330 Fatal if inhaled

H315 Causes skin irritation

H319 Causes serious eye irritation

H317 May cause an allergic skin reaction



H351 Suspected of causing cancer

H335 May cause respiratory irritation

H336 May cause drowsiness or dizziness

H372 Causes damage to organs through prolonged or repeated exposure (respiratory system)

H373 May cause damage to organs through prolonged or repeated exposure (liver, kidneys)

#### PRECAUTIONARY STATEMENT

##### Prevention

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

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.

P284 In case of inadequate ventilation wear respiratory protection.

P271 Use only outdoors or in a well-ventilated area.

P264 Wash contaminated parts thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

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

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.

P310 Immediately call a POISON CENTER/doctor/physician.

P312 Call a POISON CENTER/doctor/physician if you feel unwell.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

P362 + P364 Take off contaminated clothing and wash it before reuse.

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 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

##### Storage

P403 Store in a well-ventilated place.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

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".



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**Section 3. Composition/information on ingredients**

Mixture/Substance selection:

Substance

Ingredient name	Content (%)	CAS No.	ENCS	Chemical formula
Furfuryl alcohol	$\geq 97$	98-00-0	5-31	C <sub>5</sub> H <sub>6</sub> O <sub>2</sub>

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

Impurities

Furfural &lt;1.0% (CAS No.98-01-1)

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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.

Immediately call a POISON CENTER/doctor/physician.

IF INHALED: 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.

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.

Immediately call a POISON CENTER/doctor/physician.

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

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**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.

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## 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

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

Solid: Sweep up, place in a bag and hold for waste disposal.

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.

(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.

Use only outdoors or in a well-ventilated area.



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.

Contaminated work clothing should not be allowed out of the workplace.

Take off immediately all contaminated clothing and wash it before reuse.

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.

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## Section 8. Exposure controls/personal protection

Control parameters

Administrative Control Levels and Concentration standard value

(Furfuryl alcohol)

Concentration standard value TWA: 0.2ppm

(Furfural)

Concentration standard value TWA: 0.2ppm

Occupational Exposure Limit

The Japan Society for Occupational Health

(Furfuryl alcohol)

5ppm; 20mg/m<sup>3</sup>

(Furfural)

2.5ppm; 9.8mg/m<sup>3</sup> (skin)

ACGIH

(Furfuryl alcohol)

TWA: 0.2ppm (URT & eye irr)

(Furfural)

TWA: 0.2ppm (URT & eye irr)

Notation

(Furfuryl alcohol)

Skin

(Furfural)

Skin

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.

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## Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless to yellow brown

Odor: Characteristic odor

Melting point/Freezing point: -31°C

Boiling point or initial boiling point: 170°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: 16.3 vol %

Flash point: 75°C

Auto-ignition temperature: 390°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity: 4.09mm<sup>2</sup>/s(25°C)

Solubility:

Solubility in water: Soluble

Solubility in solvent data is not available.

n-Octanol/water partition coefficient: log Pow0.28

Vapor pressure: 53 Pa (20°C)

Density and/or relative density: 1.13(20°C)

Relative vapor density (Air=1): 3.4

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

Particle characteristics data is not available.

**Other information**

Other information is not available.

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## Section 10. Stability and Reactivity

**Reactivity**

Not available.

**Chemical stability**

Turns red or brown on exposure to light and air. (ICSC 0794)

**Possibility of hazardous reactions**

Reacts with strong oxidants and acids. This generates fire and explosion hazard. Attacks some types of plastic.(ICSC 0794)

**Conditions to avoid**

- Contact with incompatible materials.
- Contact with fire source.

**Incompatible materials**

- Acids, Strong oxidizing agents

**Hazardous decomposition products**

- Carbon oxides

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

- Category 3, Toxic if swallowed

**[Data for components of the product]****[NITE-CHRIP]**

(Furfuryl alcohol)

rat LD50: 110 – 132 mg/kg (source: NITE)

(Furfural)

rat LD50: 50 – 100 mg/kg (source: NITE)

**Acute toxicity (Dermal)****[Product]**

- Category 3, Toxic in contact with skin

**[Data for components of the product]****[NITE-CHRIP]**

(Furfuryl alcohol)

rabbit LD50: 400 mg/kg (source: NITE)

(Furfural)

rabbit LD50: 310 – 1000 mg/kg (source: NITE)

**Acute toxicity (Inhalation)****[Product]**

- Category 2, Fatal if inhaled

**[Data for components of the product]****[NITE-CHRIP]**

(Furfuryl alcohol)

vapor: rat LC50: 233 ppm (4-hour) (source: NITE)

(Furfural)

vapor: rat LC50: 0.6 mg/L (4-hour) (source: NITE)

**Irritant properties****Skin corrosion/irritation****[Product]**

- Category 2, Causes skin irritation

**[Data for components of the product]****[NITE-CHRIP]**

(Furfuryl alcohol)

Category 2 (source: NITE)

(Furfural)

Category 2 (source: NITE)

**Serious eye damage/irritation**

[Product]

Category 2, Causes serious eye irritation

[Data for components of the product]

[NITE-CHRIIP]

(Furfuryl alcohol)

Category 2 (source: NITE)

(Furfural)

Category 2A (source: NITE)

Sensitization

Skin sensitization

[Product]

Category 1, May cause an allergic skin reaction

[Data for components of the product]

[NITE-CHRIIP]

(Furfuryl alcohol)

Category 1B (source: NITE)

Mutagenic effects data is not available.

Carcinogenicity

[Product]

Category 2, Suspected of causing cancer

[Data for components of the product]

[NITE-CHRIIP]

(Furfuryl alcohol)

Category 2 (source: NITE)

(Furfural)

Category 2 (source: NITE)

[IARC]

(Furfuryl alcohol)

Group 2B : Possibly carcinogenic to humans

(Furfural)

Group 3 : Not classifiable as to its carcinogenicity to humans

[ACGIH]

(Furfuryl alcohol)

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans

(Furfural)

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans

[EU]

(Furfuryl alcohol)

Category 2; Substances suspected human carcinogens

(Furfural)

Category 2; Substances suspected human carcinogens

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 3, May cause respiratory irritation

Category 3, May cause drowsiness or dizziness

[Data for components of the product]

[NITE-CHRIIP]

(Furfuryl alcohol)





Category 3 (Respiratory tract irritation), Category 3 (Narcotic effects) (source: NITE)  
STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

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

[Data for components of the product]

[NITE-CHRIP]

(Furfuryl alcohol)

Category 1 (respiratory system), Category 2 (liver, kidneys) (source: NITE)

Aspiration hazard data is not available.

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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)

[NITE-CHRIP]

(Furfural)

Fish (*Gambusia affinis*) 96-hour LC50: 24 mg/L (source: NITE)

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

[NITE-CHRIP]

(Furfural)

Crustacea (*Daphnia magna*) 21-day NOEC (reproduction, growth): 1.9 mg/L (source: NITE)

Water solubility

(Furfuryl alcohol)

freely soluble (source: ICSC, 2019)

(Furfural)

8.3 g/100 mL (20°C) (source: ICSC, 2012)

Persistence and degradability

[Data for components of the product]

(Furfural)

Rapidly degradable (Degradation rate: 93.5% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

(Furfuryl alcohol)

log Pow: 0.28 (source: NITE)

(Furfural)

log Kow: 0.41 (source: NITE)

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

Dispose of contents/container as industrial waste. Accordance with local/national



regulation.

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**Section 14. Transport Information**

UN Number or ID Number : 2874

UN Proper Shipping Name :

FURFURYL ALCOHOL

Class or division (Transport hazard class) : 6.1

Packing group : III

ERG GUIDE No.: 153

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2874

UN Proper Shipping Name :

FURFURYL ALCOHOL

Class or division (Transport hazard class) : 6.1

Packing group : III

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2874

UN Proper Shipping Name :

FURFURYL ALCOHOL

Class or division (Transport hazard class) : 6.1

Hazard labels : Toxic

Packing group : III

Environmental hazards

Marine pollutants (yes/no) : no

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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

Furfuryl alcohol; Furfural

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**

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (66th Edition) 2025

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2024 Recommendation on TLVs (JSOH)

Supplier's data/information

General Disclaimer



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Unauthorized translation or modification is prohibited.

Please provide SDS to customers for selling or transferring.

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 Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).