



Safety Data Sheet

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

Product identifier:

Product name: DL-Camphor

SDS No. : 1406E-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

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable solids: Category 2

HEALTH HAZARDS

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity – single exposure: Category 1 (central nervous system)

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

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

H228 Flammable solid

H318 Causes serious eye damage

H370 Causes damage to organs (central nervous system)

H372 Causes damage to organs through prolonged or repeated exposure (liver, nervous system)

H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

P273 Avoid release to the environment.

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

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilating/lighting equipment.



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.

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

Response

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

P391 Collect spillage.

P314 Get medical advice/attention if you feel unwell.

P310 Immediately call a POISON CENTER/doctor/physician.

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.

Storage

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.	ENCS	Chemical formula
DL-Camphor	≥ 96	76-22-2	4-308;4-601	C ₁₀ H ₁₆ O

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

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 water mist or loaded liquid, foam, inactive gases, dry powder, dry sand to extinguish.

*Fire Service Act Combustible solids or synthetic resins

Unsuitable extinguishing media

Extinguisher which discharge dry chemical fire extinguishing agents—Others (except for phosphates etc., hydrogen carbonates etc.)

*Ministerial Ordinance for Enforcement of the Fire Service Act (Appended Table 2)

Combustible solids or synthetic resins

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

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

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.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

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

Concentration standard value TWA: 2ppm

Adopted value

(Other inorganic and organic dust (third class dust))

JSOH Respirable dust 2mg/m³, Total dust 8mg/m³

ACGIH(1996) TWA: 2ppm;

STEL: 3ppm (Eye & URT irr; anosmia)

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: Crystal, crystalline powder or lump

Color: Colorless or white

Odor: Characteristic odor

Melting point/Freezing point: 180°C

Boiling point or initial boiling point: (DL-Camphor)204°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: 0.6 vol %

Upper explosion limit: 3.5 vol %

Flash point: (DL-Camphor)(C.C.) 66°C

Auto-ignition temperature: (DL-Camphor)466°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 0.12 g/100 ml (25°C)

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure: 27 Pa (20°C)

Density and/or relative density: 0.99 g/cm³

Relative vapor density (Air=1): 5.24

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.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Sublimes at room temperature.(ICSC 1021)

Possibility of hazardous reactions

Dust explosion possible if in powder or granular form, mixed with air.

Decomposes on burning. This produces toxic gases and irritating fumes. Reacts violently with strong oxidants, strong reducing agents and chlorinated solvents. This generates fire and explosion hazard. (ICSC 1021)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong oxidizing agents, Strong reducing agents, Chlorinated solvents

Hazardous decomposition products

Carbon oxides

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity data is not available.

Irritant properties

Skin corrosion/irritation data is not available.

Serious eye damage/irritation

[Product]

Category 1, Causes serious eye damage

[Data for components of the product]

[NITE-CHRIP]

Category 1 (source: NITE)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[Data for components of the product]

[ACGIH]

A4(1996) : Not Classifiable as a Human Carcinogen

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 1, Causes damage to organs

[Data for components of the product]

[NITE-CHRIP]

Category 1 (central nervous system) (source: NITE)

STOT-repeated exposure

[Product]

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

[Data for components of the product]

[NITE-CHRIP]

Category 1 (liver, nervous system) (source: NITE)

Aspiration hazard data is not available.

Information on other hazards

May cause lung disorders by massive inhalation of powdered substance.

-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

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

[NITE-CHRIP]

Fish (*Brachydanio rerio*) 96-hour LC50: 33.25 mg/L (OECD TG 203, GLP) (source: NITE)

Crustacea (*Daphnia magna*) 48-hour EC50: 4.23 mg/L (OECD TG 202, GLP) (source: NITE)



Algae (*Raphidocelis subcapitata*) 72-hour ErC50: 1.71 mg/L (OECD TG 201, GLP) (source: NITE)
Hazardous to the aquatic environment, long-term (chronic)

[NITE-CHRIIP]

Algae (*Raphidocelis subcapitata*) 72-hour NOErC: 0.032 mg/L (OECD TG 201, GLP) (source: NITE)

Water solubility

not poorly water-soluble (1600 mg/L (20°C)) (source: NITE)

Persistence and degradability

[Data for components of the product]

Rapidly degradable (Degradation rate: 93, 93, 96% (by BOD)) (OECD TG 301C, GLP) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

log Kow: 2.38 (source: NITE)

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 : 2717

UN Proper Shipping Name :

CAMPHOR, synthetic

Class or division (Transport hazard class) : 4.1

Packing group : III

ERG GUIDE No.: 133

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 2717

UN Proper Shipping Name :

CAMPHOR, synthetic

Class or division (Transport hazard class) : 4.1

Packing group : III

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 2717

UN Proper Shipping Name :

CAMPHOR, synthetic

Class or division (Transport hazard class) : 4.1

Hazard labels : Flamm.solid

Packing group : III

Environmental hazards

Marine pollutants (yes/no) : yes



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

Applicable

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

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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).