



## Safety Data Sheet

---

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

**Product identifier:**

Product name: 4-Methyl-2-pentanone

SDS No. : 4897E-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 liquids: Category 2

**HEALTH HAZARDS**

Acute toxicity (Inhalation): Category 3

Serious eye damage/eye irritation: Category 2B

Carcinogenicity: Category 1B

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 (central nervous system)

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

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

Highly flammable liquid and vapor

Toxic if inhaled

Causes eye irritation

May cause cancer

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure (central nervous system)

**PRECAUTIONARY STATEMENT****Prevention**

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.  
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 (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
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.

**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.

---

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

Ingredient name:4-Methyl-2-pentanone  
Content (%):99(min)  
Chemical formula:(CH<sub>3</sub>)<sub>2</sub>CHCH<sub>2</sub>COCH<sub>3</sub>  
Chemicals No, Japan:2-542  
CAS No.:108-10-1  
MW:100.16  
ECNO:203-550-1

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 (or hair)**

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.

**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 piece 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.

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

---

## Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(4-Methyl-2-pentanone)

ACGIH(2010) TWA: 20ppm;

STEL: 75ppm (URT irr; dizziness; headache)

OSHA-PEL

(4-Methyl-2-pentanone)

TWA: 100ppm, 410mg/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.

---

## Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless, Clear

Odor: Characteristic odour

Melting point/Freezing point: -84.7°C

Boiling point or initial boiling point: 117 through 118°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: 1.4 vol %

Upper explosion limit: 7.5 vol %

Flash point: (C.C.)(4-Methyl-2-pentanone)14°C

Auto-ignition temperature: 460°C

Decomposition temperature data is not available.

pH data is not available.

Dynamic viscosity: 0.55mPas(25°C)

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 1.91 g/100 ml (20°C)

n-Octanol/water partition coefficient: log Pow1.38

Vapor pressure: 2.1 kPa (20 C)

Density and/or relative density: 0.80

Relative vapor density (Air=1): 3.45

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

The vapour mixes well with air, explosive mixtures are easily formed.

The substance can form explosive peroxides on exposure to air. Reacts violently with strong oxidants and strong reducing agents. (ICSC 0511)

### Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

### Incompatible materials

Strong oxidizing agents, Strong reducing agents

### Hazardous decomposition products

Carbon oxides, Explosive peroxides

---

## Section 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

rat LD50=2080mg/kg (ACGIH, 2010)

##### Acute toxicity (Inhalation)

[Data for components of the product]

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

vapor: rat LC50=8.2mg/L/4hr (NTP TR 538, 2007)

#### Irritant properties

Skin corrosion/irritation data is not available.

#### Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]



(4-Methyl-2-pentanone)

rabbit recover within 7 days (ECETOC TR48, 1992)

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]

(4-Methyl-2-pentanone)

cat.1B; (IARC 101, 2012)

[IARC]

(4-Methyl-2-pentanone)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(4-Methyl-2-pentanone)

A3(2010) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

[EU]

(4-Methyl-2-pentanone)

Category 2; Substances suspected human carcinogens

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Data for components of the product]

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

respiratory tract irritation (PATTY 6th, 2012)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

narcotic effect (PATTY 6th, 2012)

STOT-repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

central nervous system (ACGIH 7th, 2010)

Aspiration hazard data is not available.

---

## 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]

(4-Methyl-2-pentanone)

Fish (Pimephales promelas) LC50=505mg/L/96hr (ECETOC TR91, 2003)

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

[GHS Cat. Japan, base data]

(4-Methyl-2-pentanone)

Fish (Pimephales promelas) NOEC=57mg/L/31days (MOE Japan, 2008)

Water solubility

(4-Methyl-2-pentanone)

1.91g/100 ml (20°C) (ICSC, 1997)

**Persistence and degradability**

[Data for components of the product]

(4-Methyl-2-pentanone)

Rapidly degradable (BOD\_Degradation : 84%/14 days; TOC\_Degradation: 97.1%/14 days;

GC\_Degradation: 100%/14 days (MITI official bulletin))

**Bioaccumulative potential**

[Data for components of the product]

(4-Methyl-2-pentanone)

log Pow=1.38 (ICSC, 1997)

**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**

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

---

**Section 14. Transport Information**

UN Number or ID Number : 1245

UN Proper Shipping Name :

METHYL ISOBUTYL KETONE

Class or division (Transport hazard class) : 3

Packing group : II

ERG GUIDE No.: 127

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

UN Number or ID Number : 1245

UN Proper Shipping Name :

METHYL ISOBUTYL KETONE

Class or division (Transport hazard class) : 3

Packing group : II

**IATA (Dangerous Goods Regulations)**

UN Number or ID Number : 1245

UN Proper Shipping Name :

METHYL ISOBUTYL KETONE

Class or division (Transport hazard class) : 3

Hazard labels : Flamm.liquid

Packing group : II

**Environmental hazards**

Marine pollutants (yes/no) : no

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Noxious Liquid Substances ; Cat. Z

4-Methyl-2-pentanone



---

**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

4-Methyl-2-pentanone

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 2: H225 Highly flammable liquid and vapour

Acute toxicity, Category 3: H331 Toxic if inhaled

Serious eye damage/eye irritation, Category 2B: H320 Causes eye irritation

Carcinogenicity, Category 1B: H350 May cause cancer

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

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).