



## SAFETY DATA SHEET

### METHYL ISOBUTYL KETONE

#### 1.IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: METHYL ISOBUTYL KETONE

Recommended use: Chemical for industrial

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**  
82/80 Soi Ekamai 22 (Nuannoi), Sukhumvit 63,  
Klong Tan Nuea, Watthana, Bangkok 10110

Telephone No: 0-2715-0897-9, 0-2392-3410-3

Fax No: 0-2715-0908-9, 0-2391-1571-2

Emergency Telephone No: 0-2715-0897-9, 0-2392-3410-3

#### 2. HAZARDS IDENTIFICATION

##### Label elements

Pictogram



Signal word

Danger

##### Hazard statement(s):

- 1.) Highly flammable liquid and vapour.
- 2.) Causes skin irritation.
- 3.) Causes serious eye irritation.
- 4.) May be harmful in contact with skin.
- 5.) Toxic if inhaled.
- 6.) May causes respiratory irritation.
- 7.) May be harmful if swallowed.
- 8.) May be harmful if swallowed and enters airways.
- 9.) May cause drowsiness or dizziness.



10.) Causes damage to organs (Nervous system) through prolonged or repeated exposure.

11.) Suspected of causing cancer.

**Precautionary statement(s):**

1.) Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

2.) Obtain special instructions before use, and DO NOT handle until all safety precautions have been read and understood.

3.) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

4.) Ground/bond container and receiving equipment.

5.) Use explosion-proof electrical /ventilating /lighting equipment.

6.) Use only non-sparking tools.

7.) Keep container tightly closed.

8.) Take precautionary measures against static discharge.

9.) Wash hand thoroughly after handling.

10.) Use only outdoors or in a well-ventilated area.

11.) Wear protective gloves/protective clothing/eye protection/face protection.

12.) Use personal protective equipment as required.

13.) IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

14.) If expose or concerned: Get medical advice/ attention.

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

16.) IF SWALLOWED: call a doctor/physician.

17.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

18.) If eye irritation persists: Get medical advice/ attention.

19.) IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

20.) Do NOT induce vomiting.

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

22.) In case of fire: Use water mist, carbon dioxide(CO<sub>2</sub>), dry sand, dry chemical or alcohol resistant foam to extinguish.

23.) Specific treatment.

24.) Store in a well-ventilated place. Keep container tightly closed.

25.) Store in a well-ventilated place. Keep cool.

26.) Store locked up.

27.) Avoid release to the environment.



28.) Dispose of contents and container in accordance with local/regional/national/international regulation.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonym:** Isopropylacetone, Isobutyl methyl ketone, MIBK, 2-Methyl-4-pentanone, Shell mibk, Methyl-2-pentanone, Isohexanone, Methyl Isobutyl Ketone (Hexone), 4-Methylpentan-2-one, 4-Methyl-2-pentanone.

Ingredients	% (w/w)	CAS NO.
METHYL ISOBUTYL KETONE	100	108-10-1

### 4. FIRST AID MEASURES

**General advice:** Show this safety data sheet to the doctor in attendance. First aider needs to protect himself.

Place affected clothing in a sealed bag for subsequent decontamination.

**Inhalation:** Remove to fresh air. If vomiting, turn the face sideways to avoid asphyxiation. If not breathing, give artificial respiration. Keep person warm and at rest. Get medical attention immediately.

**Skin contact:** Immediately remove contaminated clothing and shoes. Flush skin with large amount of water, clean of with soap and water. Get medical attention if symptoms develop.

**Eye contact:** Get immediate medical advice/attention. Immediately flush eyes with plenty of water for several minutes. Part eyelids with finger to assure complete flushing. Check for and remove contact lenses if easily possible.

**Ingestion:** Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Keep person warm and at rest. Get medical attention immediately.

### 5. FIRE-FIGHTING MEASURES

#### Suitable extinguishing media:

Use water spray or fog, alcohol-resistant foam, dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not discharge extinguishing waters into the aquatic environment.

#### Unsuitable Extinguishing Media:

Avoid use of water jet for extinguishing.

#### Specific hazards arising from Chemicals:

Container exposed to intense heat from fires should be cooled with large quantities of water. The vapour is heavier than air, spreads along the ground and ignition is possible.



### Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus and wear full protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions:

Wear appropriate personal protective equipment such as protective gloves, protective clothing, eye protection, face protection, etc. Keep unnecessary and unprotected personnel away. Keep upwind, evacuate downwind. Wear appropriate personal protective equipment as specified in section 8. Evacuate immediate area. Warn personnel of fire, explosion, and health hazard.

### Environmental precautions:

Try to prevent the material from entering drains or water courses. Prevent product from entering sewage system. Dam up. Local authorities should be advised if significant spillages cannot be contained.

### Methods and Material for Containment and Clean Up:

Use only non-sparking tools. Absorb or cover with dry earth, sand or other non-combustible material and transfer to sealable containers.

Large spills: Dike far ahead of liquid spill for later disposal. Stop leak if possible without personal risk.

## 7. HANDLING AND STORAGE

### Precautions for Safe Handling & Product Transfer:

Avoid direct physical contact. Comply with all applicable laws and regulations for handling. Do not handle until all safety precautions have been read and understood. Operators should wear antistatic footwear and clothing. Do not inhale the steam prolonged or repeated. Avoid contact with heat, sparks, flame or other ignition sources. Contaminated work clothing should not be allowed out of the workplace.

### Conditions for Safe Storage & Unsuitable Materials:

Store locked up. The floor must be protected from water and impermeable. The inventory location must be fire-resisting. Make the roof from nonflammable materials, and do not install the ceiling. Install appropriate facilities for lighting/ventilating. Ground and bond containers and equipment to prevent build-up of electrostatic charges.

Suitable packaging material: Stainless steel, Carbon steel. For container paints, use epoxy paint, zinc silicate paint.

Unsuitable packaging material: Plastics, Aluminium, Natural, Neoprene or nitrile rubbers.



## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Occupational Exposure Limits:** TWA 15 - 50 ppm.

**Appropriate Engineering Controls:** Provide safety shower and eye wash station near work area. Use closed system or local exhaust ventilation.

### Individual Protection Measures

**Respiratory protection:** Use a respirator with an approved filter if a risk assessment indicates this is necessary.

**Hand protection:** Wear appropriate chemical resistant glove..

**Eye protection:** Safety goggles, Eye shield, Face shield.

**Skin and body protections:** Use protective clothing which is chemical resistant to this material. Safety shoes and boots should also be chemical resistant.

**Hygiene measures:** Ensure that eyewash stations and safety showers are close to the workstation location. Use clean, well-maintained personal protection equipment. Wash hands before breaks and at the end of workday. When using do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form, Color and Odor:</b> liquid, colourless, characteristic	<b>Evaporation rate :</b> 1.55 - 5.60 ( n-Butyl Acetate = 1)
<b>Melting Point:</b> (-85 ) - (-84) °C	<b>Specific gravity :</b> 0.799-0.804 g/cm <sup>3</sup> at 20 °C
<b>pH:</b> 7 - 8	<b>Solubility in water :</b> 16 – 20 g/l at 20 °C
<b>Boiling:</b> 114-118 °C	<b>Viscosity :</b> 0.61 cP (20 °C)
<b>Vapor pressure:</b> 6 - 16 mmHg at 20 °C, 1.9 - 2.1 kPa at 20 °C	<b>Vapor density:</b> 3.45 – 3.50 (air=1)
<b>Lower explosion limits:</b> 1.2 - 1.4 %Vol	<b>Upper explosive limit:</b> 7.5 - 8.0 %Vol
<b>Auto-ignition temperature:</b> 448 – 460 °C	<b>Flash point:</b> 13 – 15.85 °C
<b>Odour threshold:</b> 0.1 - < 100ppm, 0.10-7.8(detected), 0.27-16ppm(sensed)	<b>Flammability (solid, gas):</b> N/A
<b>Decomposition temperature:</b> N/A	<b>Solubility in other solvents:</b> miscible with most organic solvent
<b>n-octanol/water partition coefficient (log P<sub>ow</sub>):</b> 1.31 – 1.38	

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under recommended storage conditions. May form peroxide in heated air.



<b>Reactions:</b>	Not classified as a reactivity hazard.
<b>Possibility of Hazardous Reactions:</b>	Reacts violently with strong oxidizers, oxidizing agents (such as peroxides, nitrates and perchlorates), reducing agent and potassium-t-butoxide. Attacks many plastics and rubbers. Cylinders exposed to fire may vent and release flammable gas.
<b>Conditions to avoid:</b>	Heat, flames, sparks, fire, moisture, direct sources of heat, ignition sources, build-up of electrostatic charge, incompatible materials and condition, and hot surfaces.
<b>Materials be avoid:</b>	Strong oxidizing agents, reducing agents, strong bases, peroxides, amines, potassium-t-butoxide, oxidizer (such as peroxides, nitrates and perchlorates) and strong acids.
<b>Hazardous decomposition products:</b>	Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation. Peroxide and other organic compounds. May emit flammable vapour if involved in fire.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute toxicity:</b>	LD50 (Oral, rat): >2000 - <=5000 mg/kg. LD50 (Oral, mouse): 2080 mg/kg LD50 (Dermal, rabbit): >2000 - 20000 mg/kg. LC50 (Inhalation, rat): 8.18 - <=20.00 mg/l,4h
<b>Sensitization:</b>	May be harmful if swallowed. May be harmful if swallowed and enters airways. May be harmful in contact with skin. Harmful if inhaled. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death. Specific target organ: May cause drowsiness or dizziness. May causes respiratory irritation.
<b>Chronic toxicity:</b>	Prolonged skin contact may cause dryness and peeling. Long-term daily inhalation for 20 to 30 minutes at 500 ppm concentration will induce



weakness, lack of appetite, burning eyes, stomachache, nausea, vomiting, sore throat, anemia, swollen liver and colitis. 300 ppm/6h (6-15 days pregnant rat, inhalation) caused poisoning of the embryo.

Carcinogenicity: IARC; Group 2B, ACGIH;A3. Possibly carcinogenic to humans.

**Further toxicological information:** No data available

## 12. ECOLOGICAL INFORMATION

### Toxicity

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow): 496-514 mg/l-96 h

LC50 - Carassius auratus (goldfish): 460 mg/l - 24 h

LC50 - Fish: 460 mg/l - 24 h, 540 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia magna (water flea): 170 mg/l - 48h

EC50 - Crustacean: 170 mg/l - 48h

Toxicity to algae: LC/EC/IC5: >100 mg/l

Toxicity Bacterial: EC50 - Activated sludge: 1,000 mg/l - 3h

Biodegradability remark: Readily biodegradable meeting the 10 day window criterion. Oxidises rapidly by photo-chemical reaction in air. Release in water, this material may evaporate, decompose by photolysis, bioaccumulation inside organic organisms in the water, or adsorb to dirt and settle.

Bioaccumulative potential: log Pow 1.38

Mobility: Floats on water. When release to the soil, this material will decompose through photolysis, evaporate and decompose by decomposition of aerobic organisms. Product readily filter into the soil.

Affected in any other way: No data available

## 13. DISPOSAL CONSIDERATIONS

**Material Disposal:** Do not dispose of with domestic refuse. The product should not be allowed to enter drains, water courses or the soil. Dispose of in accordance with local regulation. Dispose of contents/container to an approved waste disposal plant. Send to a licensed waste management company.



**Container Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulations. Empty the container completely before disposal.

#### 14. TRANSPORT INFORMATION

##### ADR

UN-NO: 1245 Class: 3 Packing group: II  
Proper shipping group: METHYL ISOBUTYL KETONE

##### IMD/IMDG

UN-NO: 1245 Class: 3 Packing group: II  
EMS: F-E, S-D Marine pollutant: NO  
Proper shipping group: METHYL ISOBUTYL KETONE

##### IATA

UN-NO: 1245 Class: 3 Packing group: II  
Proper shipping group: METHYL ISOBUTYL KETONE

#### 15. REGULATORY INFORMATION

The regulation information is not intended to be comprehensive. Other regulations may apply to this material.

##### Chemical Inventory Status

AICS : Listed.  
DSL : Listed.  
INV (CN) : Listed.  
ENCS (JP) : Listed. (2)-542  
TSCA : Listed.  
EINECS : Listed. 203-550-1  
KECI (KR) : Listed. KE-24725  
PICCS (PH) : Listed.

##### Apply Regulation:

1. Enforcement Rules of the Occupational Safety and Health Act.
2. Regulations of Hazard Communication of Dangerous and Harmful Material.
3. Toxic Chemical Substances Control Act.
4. Standards of Tolerable Hazardous Substance Concentration in the air of Labor Working Environment.





5. Traffic Safety Regulations.
6. Public Hazardous Material and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations.

**Notification Status**

Japan	ENCS:	On the inventory, or in compliance with the inventory.
United States	TSCA:	On the inventory, or in compliance with the inventory.
European Union	EINECS, ELINCS, NLP:	All components of this product are on EINCES, ELINCS, or NLP.
Canada	DSL,NDSL:	All components of this product are on DSL.
Australia	AICS:	On the inventory, or in compliance with the inventory.
Korea	KECI:	On the inventory, or in compliance with the inventory.
China	IECSC:	On the inventory, or in compliance with the inventory.
New Zealand	NZIoC:	On the inventory, or in compliance with the inventory.
Philippine	PICCS:	On the inventory, or in compliance with the inventory.

**15.1 Safety, health and environmental regulation/legislation specific for the substance or mixture**HMIS (Hazardous Materials Identification System (Piant &Coating)) – Classification

Health	3 serious
Flammability	3 serious
Reactivity	0 minimal
PPE	Determined by user; depend on local conditions

NFPA (National Fire Protection Association) - Classification

Health	3 serious
Flammability	3 serious
Instability or Reactivity	0 minimal

**Notification Status**

<b>Inventory Information</b>	<b>Status</b>
United States TSCA Inventory	- Listed on inventory
Canadian Domestic Substances List (DSL)	- Listed on inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on inventory
Japan. CSCL- Inventory of Existing and New Chemical Substances	- Listed on inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on inventory



China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on inventory

#### A. National and/or international regulation information

##### ○ POPs Management Law

- Not applicable

##### ○ Information of EU Classification

###### \* Classification

- [4-Methyl-2-pentanone ; Methylisobutyl ketone, MIBK] : F; R11 Xn; R20 Xi; R36/37 R66

###### \* Risk Phrases

- [4-Methyl-2-pentanone ; Methylisobutyl ketone, MIBK] : R11, R20, R36/37, R66

###### \* Safety Phrases

- [4-Methyl-2-pentanone ; Methylisobutyl ketone, MIBK] : S2, S9, S16, S29

##### ○ U.S. Federal regulations

###### \* OSHA PROCESS SAFETY (29CFR1910.119)

- Not applicable

###### \* CERCLA Section 103 (40CF302.4)

- [4-Methyl-2-pentanone ; Methylisobutyl ketone, MIBK] : 2267.995 kg 5000 lb

###### \* EPCRA Section 302 (40CFR355.30)

- Not applicable

###### \* EPCRA Section 304 (40CFR355.40)

- Not applicable

###### \* EPCRA Section 313 (40CFR372.65)

- [4-Methyl-2-pentanone ; Methylisobutyl ketone, MIBK] : Applicable

##### ○ Rotterdam Convention listed ingredients

- Not applicable

##### ○ Stockholm Convention listed ingredients

- Not applicable

##### ○ Montreal Protocol listed ingredients

- Not applicable



## 16. Other Information

Modern Chemical Co.,Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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