



SAFETY DATA SHEET

METHYL ETHYL KETONE

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

Product name: METHYL ETHYL KETONE

Recommended use: Chemical for industry.

Manufacturer/Supplier: **MODERN CHEMICAL CO.,LTD.**
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2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s)

- 1.) Highly flammable liquid and vapour.
- 2.) Causes skin irritation.
- 3.) May be fatal if swallowed and enters airways.
- 4.) May cause drowsiness or dizziness.
- 5.) Toxic to aquatic life with long lasting effects.
- 6.) May damage the unborn child. Suspected of damaging fertility.

Precautionary statement(s)

- 1.) Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 2.) Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.



- 3.) Avoid release to the environment.
- 4.) IF SWALLOWED: call a doctor/physician. Do NOT induce vomiting.
- 5.) IF IN EYES: Rinse cautiously with water for 15 minutes.
- 6.) IF ON SKIN Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: 2-Butanone, Ethyl methyl ketone, Methyl acetone, MEK

Ingredients	% (w/w)	CAS NO.
METHYL ETHYL KETONE	100	78-93-3

4. FIRST AID MEASURES

- General advice:** Show this safety data sheet to the doctor in attendance.
- Inhalation:** Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
- Skin contact:** Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.
- Eye contact:** If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes. Obtain medical attention.
- Ingestion:** **Do not induce vomiting.** Seek immediate medical attention.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

Unsuitable Extinguishing Media:

Straight streams of water

Specific hazards arising from Chemicals:

Smoke, Fume, Incomplete combustion products, Oxides of carbon.

Special protective equipment for fire-fighters:

Wears self contained breathing apparatus for fighting if necessary.



6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

Environmental precautions: Contain or absorb leaking liquid with sand or earth, consults an expert. Prevent liquid entering sewers, basements and workpits. If substance has entered a water course or sewer or contaminated soil or vegetation, advise police.

Methods and Material for Containment and Clean Up:

Spillage: May react with combustible substances creating fire or explosion hazard and formation of toxic fumes. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Soak up with inert absorbent material (e.g. sand, silicagel). Prevent liquid entering sewers, basements and workpits; vapor may create explosive atmosphere. Transfer to covered steel drums. Dispose promptly.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Avoid contact with skin. Avoid contact with eyes. Use non-sparking tools and explosion-proof equipment.

Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Use proper bonding and/or earthing procedures. Prevent small spills and leakage to avoid slip hazard.

Conditions for Safe Storage & Unsuitable Materials:

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be earthed and bonded. Drums must be earthed and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 200 ppm, STEL 300 ppm

Appropriate Engineering Controls: The product should only be used in ventilation hoods and fans

Individual Protection Measures

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter A (according to DIN3181) for vapors of organic compounds.

Hand protection: Handle with gloves. In case full contact and splash contact wear gloves from butyl rubber material. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it.

Eye protection: Goggles giving complete protection to eyes.

Skin and body protections: Chemical resistant apron / flame retardant antistatic protective clothing, heavy duty work shoes.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end workday. Keep away from food, drink.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colourless, Characteristic	Evaporation rate: 572(n-Bu Acetate = 100)
Melting Point : -86 °C	Specific gravity : 0.804-0.807 g/cm ³ at 20 °C
pH : N/A	Solubility in water : Soluble
Boiling point : 78.5-81°C	Viscosity : 0.42 mPa.sec at 25 °C
Vapour pressure : 71 mbar at 20 °C	Vapour density: 2.49 g/l
Lower explosive limits: 1.8 %Vol	Upper explosive limits: 11.5 %Vol
Auto-ignition temperature: 516 °C	Flash Point: -7 °C
Odour threshold: N/A	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): 0.29	

10. STABILITY AND REACTIVITY

Chemical Stability: Stable under recommended storage conditions.

Reactions: No data available



- Possibility of Hazardous Reactions:** No data available
- Conditions to avoid:** Avoid heat, sparks, open flames and other ignition sources.
- Materials to avoid:** Strong oxidizers.
- Hazardous decomposition products:** Material does not decompose at ambient temperatures.

11. TOXICOLOGICAL INFORMATION

- Acute toxicity:** LD50 Oral – rat - 2737 mg/kg.
LD50 Dermal - rabbit – 2,700 mg/kg
LD50 Dermal – rabbit – 4,120 mg/kg
- Sensitization:** After inhalation Irritations of mucous membranes coughing and dyspnoea. Drowsiness, dizziness. After skin contact: Slight irritations. Drying out effect resulting in rough and chapped skin of skin absorption. After eyes contact: Irritations. After swallowing: Nausea and vomiting. After accidental swallowing the substance may pose a risk of aspiration. Passage into the lung (vomiting) can result in a condition resembling pneumonia (chemical pneumonitis). After absorption of large quantities: CNS disorders, drowsiness, dizziness, inebriation, drop in blood pressure, narcosis. Causes impaired function of respiratory tract, heart.
- Chronic toxicity:** Sensitization test (guinea pig): No sensitizing effect. Bacterial mutagenicity; Ames test is negative.
- Further toxicological information:** The product should be handled with the care usual dealing with chemicals.

12. ECOLOGICAL INFORMATION

Toxicity

- Toxicity to fish: LC50- *Lepomis macrochirus*-3220 mg/l- 96 h
- Toxicity to daphnia and other aquatic invertebrates: No data available
- Toxicity to algae IC5 -*Sc.quadricauda*: ≥ 4300 mg/l/7d
- Toxicity Bacterial; EC5- *Ps.putida* 1150 mg/l/16h

- Biodegradability Remarks:** Expected to be readily biodegradable. Transformation due to hydrolysis not expected to be significant. Expected to degrade at a moderate rate in water when exposed to sunlight.
- Bioaccumulative Potential:** no data available



Mobility: Expected to remain in water or migrate through soil.

Affected in any other way: no data available

13. DISPOSAL CONSIDERATIONS

Material Disposal: There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Container Disposal: Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. TRANSPORT INFORMATION

LAND

Proper Shipping Name: ETHYL METHYL KETONE

Hazard Class: 3

Hazchem Code: 2YE

UN Number: 1193

Packing Group: II

Label(s) / Mark(s): 3

SEA (IMDG)

Proper Shipping Name: ETHYL METHYL KETONE

Hazard Class & Division: 3

EMS Number: F-E, S-D

UN Number: 1193

Packing Group: II

Label(s): 3

Transport Document Name: UN1193, ETHYL METHYL KETONE (Methyl Ethyl Ketone), 3, PG II, (-4°C c.c.)



AIR (IATA)

Proper Shipping Name: ETHYL METHYL KETONE

Hazard Class & Division: 3

UN Number: 1193

Packing Group: II

Label(s) / Mark(s): 3

Transport Document Name: UN1193, ETHYL METHYL KETONE, 3, PG II

15. REGULATORY INFORMATION

GHS-Labeling

Hazard statement (s):

H225: Highly flammable liquid and vapor.

H319: Causes serious eye irritation.

H336: May cause drowsiness or dizziness.

EUH066: Repeated exposure may cause skin dryness or cracking.

Precautionary statement (s) :

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P240: Ground/bond container and receiving equipment.

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

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing vapors.

P264: Wash hand thoroughly after handling.

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

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

P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338: IF IN EYE : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do Continue rinsing.

P312: Call a POISON CENTER or doctor, physician if you feel unwell.

P337+P313 : If eye irritation persists: Get medical advice/attention.

P370+P378: In case of fire: Use carbon dioxide, dry chemical or foam for extinction.



P403+P223: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

Hazard symbol(s)

F Highly flammable.

Xi Irritant.

R- phrase(s):

R11 : Highly flammable.

R36 : Irritating to eyes.

R66 : Repeated exposure may cause skin dryness or cracking.

R67 : Vapor may cause drowsiness and dizziness.

S - phrase(s):

S 9: Keep container in a well-ventilated place.

S16: Keep away from sources of ignition. - No smoking.

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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