



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.) May be harmful if swallowed.
- 3.) Causes serious eye irritation.
- 4.) May cause drowsiness or dizziness.

Precautionary statement(s):

- 1.) Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 2.) Keep container tightly closed.
- 3.) Ground/bond container and receiving equipment.
- 4.) Use explosion-proof electrical/ventilating/lighting/equipment.



- 5.) Use only non-sparking tools.
- 6.) Take precautionary measures against static discharge.
- 7.) Wear protective gloves/protective clothing/eye protection/face protection.
- 8.) ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- 9.) Call a POISON CENTER or doctor/physician if you feel unwell.
- 10.) Contaminated work clothing should not be allowed out of the workplace.
- 11.) Avoid breathing dust/fume/gas/mist/vapours/spray.
- 12.) Wash thoroughly after handling.
- 13.) IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 14.) IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- 15.) If eye irritation persists. Get medical advice/ attention.
- 16.) Store in a well-ventilated place. Keep cool.
- 17.) Store in a well-ventilated place. Keep container tightly closed.
- 18.) Dispose of contents and container in accordance with local regulational/national/international regulations

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: Move to fresh air in case of accidental inhalation of vapors. In case of shortness of breath, give oxygen. Apply artificial respiration only if patient is not breathing. Get medical aid.

Skin contact: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes.

Get medical aid if irritation develops and persists. Wash 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.** Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

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

Unsuitable Extinguishing Media:

Do not use a solid water stream as it may scatter or spread fire.

Specific hazards arising from Chemicals:

Carbon oxide.

Special protective equipment for fire-fighters:

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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 inhalation of vapors. Use only non-sparking tools. To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded. Use explosion proof equipment. Handling is performed in a well



ventilated place. Wear suitable protective equipment. Avoid contact with skin and eyes. Keep away from heat/sparks/open flames/hot surfaces. Take precautionary measures against static discharges.

Conditions for Safe Storage & Unsuitable Materials:

Keep containers tightly closed. Keep containers in a dry, cool and well-ventilated place. Keep away from heat/sparks/open flames/hot surfaces. Store away from incompatible materials and foodstuff containers.

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. Make available in the work area emergency shower and eye wash.

Individual Protection Measures

Respiratory protection: In case of insufficient ventilation, use a full-face supplied air respirator.

Hand protection: Wear impervious chemical resistant gloves such as butyl rubber gloves, nature rubber gloves, neoprene rubber gloves, nitrile rubber gloves.

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: No data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, colourless, Acetone-like	Evaporation rate: 1.8 – 2.7 (n-Butyl Acetate = 1)
Melting Point : (-87.3) – (-86) °C	Specific gravity : 0.804-0.806 g/cm ³ at 20 °C
pH : N/A	Solubility in water : Soluble
Boiling point : 79.5 - 80°C	Viscosity : 0.40 – 0.41 cps at 20 °C
Vapour pressure : 71 – 77.5 mbar at 20 °C	Vapour density: 1.15 – 2.41 g/ml (Air = 1)
Lower explosive limits: 1.4 - 1.8 %Vol	Upper explosive limits: 11.4 – 11.5 %Vol
Auto-ignition temperature: 404 - 515 °C	Flash Point: (-9) – (4) °C
Odour threshold: N/A	Flammability (solid, gas): N/A
Decomposition temperature: N/A	Solubility in other solvents: Organic solvent
n-octanol/water partition coefficient (log P_{ow}): 0.29	



10. STABILITY AND REACTIVITY

Chemical Stability:	Stable under recommended storage conditions.
Reactions:	Contact with incompatible substances can cause decomposition or other chemical reaction. Vapours may form explosive mixture with air.
Possibility of Hazardous Reactions:	In contact with oxidants may cause a fire or an explosion.
Conditions to avoid:	Avoid heat, sparks, open flames, other ignition sources, direct sunlight, moisture and Incompatible.
Materials to avoid:	Strong oxidizing agent, alkaline agent, strong reducing agent, strong acids, 2-propanol, chloroform, bromoform and other organic solvent.
Hazardous decomposition products:	Carbon monoxide, carbon dioxide, peroxide and other organic compounds.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:	LD50 (Oral, rat): 2000 - 2737 mg/kg LD50 (Dermal, rabbit): 6480 - 13000 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 (rat):1250ppm, 2500ppm, 5000ppm: No sensitizing effect.
Further toxicological information:	no data available.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish:	LC50 - Fathead minnow: 3220 mg/l- 96 h LC50 - Bluegill/sunfish: 1690 mg/l- 96 h
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Toxicity to daphnia and other aquatic invertebrates:

EC50 - Daphnia: 7060 mg/l

Toxicity to algae: ErC50: >1200 mg/l – 72h

Toxicity Bacterial: EC50 - *Phytobacterium phosphoreum*: 3373 mg/l – 30 min

Biodegradability Remarks: Readily biodegradable.

Bioaccumulative Potential: low

Mobility: Dissolves in water. If product enters soil, it will highly mobile and may contaminate groundwater.

Affected in any other way: No data available

13. DISPOSAL CONSIDERATIONS

Material Disposal: Before disposal should refer to the relevant national and local laws and regulation.
Recommend the use of incineration disposal.

Container Disposal: Disposal in compliance with official regulations.

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

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS	ENCS
BUTANONE	✓	✓	✓	✓	✓	✓	✓	✓	✓

Note 1:

[EINECS] European Inventory of Existing Commercial Chemical Substances.

[TSCA] United States Toxic Substances Control Act Inventory.

[DSL] Canadian Domestic Substances List.

[IECSC] China Inventory of Existing Chemical Substances.

[NZIoC] New Zealand Inventory of Chemicals.

[PICCS] Philippines Inventory of Chemicals and Chemical Substances.

[KECI] Existing and Evaluated Chemical Substances.

[AICS] Australia Inventory Chemical Substances.

[ENCS] Existing And New Chemical Substances.

Note2:

✓ Indicates that the substances included in the regulations

- That no data or included in the regulations

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI F

Risk Phrases:

R 11 Highly Flammable.

R 36 Irritating to eyes.



R 66 Repeated exposure may cause skin dryness or cracking.

R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 9 Keep container in well-ventilated place.

S 16 Keep away from sources of ignition – No smoking.

WGK (Water Danger/Protection)

CAS#78-93-3: 1

Canada

CAS# 78-93-3 is listed on Canada's DSL List.

CAS# 78-93-3 is listed on Canada's Ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 78-93-3 is listed on the TSCA inventory.

16. Other Information

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