

REC'D FEB 18 2010



Product name	Methyl isobutyl ketone	NA/EN
MSDS number	80064	Revision Date Oct.06.2009
Revision Number	1	Issuing date Nov.19.2009

1. Product and company identification

Product name
Methyl isobutyl ketone

Celanese Ltd.
1601 W. LBJ Freeway
P.O. Box 819005
Dallas, TX 75381-9005
United States
Phone: 972 443 4000
Internet: www.celanese.com

Transportation emergency phone numbers:
In USA, call 800 424 9300
Outside USA, call 703 527 3887, collect calls accepted

End use:
Chemical intermediate (including monomers)

**Distributed By:
SAL Chemical
3036 Birch Drive
Weirton, WV 26062
304-748-8200**

2. Hazards identification

Emergency Overview

WARNING!
Flammable liquid and vapor.
Causes eye irritation.

Product Description

Appearance	
Form	liquid
Odor	camphor-like
Colour	colourless

Potential health effects

Routes of exposure
Skin, eyes, inhalation, ingestion.

Immediate effects

Inhalation	Symptoms of exposure may include: Nasal discharge, hoarseness, coughing, chest pain and breathing difficulty. Central nervous system depression with nausea, dizziness, headache, stupor, uncoordinated or strange behavior or unconsciousness.
Skin	Prolonged or repeated contact may dry skin and cause irritation. Symptoms of exposure may include: Drying, cracking or inflammation of skin.

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Eyes Exposure to vapors and liquid causes eye irritation. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering, and/or change of vision. Eye injury which may persist for several days.

Ingestion Symptoms of exposure may include: Nausea, vomiting, loss of appetite, gastrointestinal irritation and/or diarrhea. Central nervous system depression with nausea, dizziness, headache, stupor, uncoordinated or strange behavior, or unconsciousness.

Target organ effects

Overexposure (prolonged or repeated exposure) may cause:

- Injury to the eyes
- Irritation of the respiratory tract
- Drying of the skin

Medical conditions which may be aggravated by exposure:

Medical conditions which may be aggravated by exposure: Skin
Eyes
Respiratory Tract

3. Composition/information on ingredients

Components	CAS-No	Percent %
4-Methylpentan-2-one	108-10-1	99

4. First aid measures

General Information

Wash contaminated clothing before re-use.

Inhalation

Move to fresh air. If symptoms persist, call a physician.

Skin

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Call a physician immediately.

Ingestion

Do NOT induce vomiting.. Call a physician immediately.

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5. Fire-fighting measures

NFPA: **Health:** 2 **Flammability:** 3 **Instability:** 1

Suitable extinguishing media

Use CO2 or dry chemical for small fires, Use alcohol type aqueous film forming foam for large fires

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases

Under conditions giving incomplete combustion, hazardous gases produced may consist of carbon monoxide

Vapors are heavier than air and may spread along floors

Oxidizing chemicals may accelerate the burning rate in a fire situation. If potential for exposure to vapors or products of combustion exists, wear full fire fighting turnout gear and NIOSH approved self-contained breathing apparatus.

Environmental precautions

Dike and collect water used to fight fire

Other Information

In the event of fire, cool tanks with water spray. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use

6. Accidental release measures

Personal precautions

Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Keep unnecessary people away; isolate hazard area and deny entry. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Material creates a special hazard because it floats on water. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

Environmental precautions

Should not be released into the environment. Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning Up

Remove all sources of ignition. Soak up with inert absorbent material. Dispose of in accordance with local regulations. Shovel or sweep up. Keep in suitable, closed containers for disposal.

Authority Notification

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:

5000 lbs for MIBK and 100 lbs for RCRA HAZARDOUS WASTE NO. D001

7. Handling and storage

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7. Handling and storage

Handling

Advice on safe handling

Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

Protection - fire and explosion:

Take necessary action to avoid static electricity discharge Ground and bond containers when transferring material

Storage

Technical measures/Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight Handle and open container with care

Material storage

Keep away from reactive metals (sodium, zinc, copper, calcium, etc.).

8. Exposure controls / personal protection

OSHA Exposure Limits

Components	TWA
4-Methylpentan-2-one	100 PPM

Components	STEL
4-Methylpentan-2-one	75 PPM

ACGIH Exposure Limits

Components	TWA
4-Methylpentan-2-one	50 PPM

Components	STEL
4-Methylpentan-2-one	75 PPM

Mexico National Exposure Limits

Components	LMPE - PPT	
4-Methylpentan-2-one	205 mg/m ³	50 PPM

Components	STEL	
4-Methylpentan-2-one	307 mg/m ³	75 PPM

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Exposure controls

Engineering measures

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Protective Equipment

A safety shower and eyebath should be readily available.

General advice

Avoid contact with skin and eyes. Remove and wash contaminated clothing before re-use.

Respiratory protection

Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must have an end of service life indicator, or a documented change out schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For concentrations > the IDLH level or unknown concentration (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use positive-pressure self-contained breathing apparatus with full facepiece or full facepiece mask with chin style or front or back mounted type industrial size canister specifically approved for protection against formaldehyde.

Skin protection:

Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present

Eye/face protection:

Wear chemical goggles when there is a reasonable chance of eye contact..

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9. Physical and chemical properties

Appearance

Form	liquid
Colour	colourless
Odor	camphor-like
Molecular Weight	100.16
Flash point	15.6°C(60°F)
Method	closed cup
Ignition temperature	448°C (840°F)
Lower explosion limit	1.4 Vol. %
Upper explosion limit	7.5 Vol. %
Melting point/range	-80.3°C (-112.54°F)
Boiling point/range	116°C (240.8°F) @ 1013 hPa

Density	0.80 g/ml @ 20°C
pH	neutral to weak acidic
vapor pressure	19 hPa @ 20°C
	91 hPa @ 50°C
vapor density	3.5 (Air=1)
Evaporation Rate	5.6 (Ether = 1)
Water solubility	19 g/l @ 25°C
Partition coefficient (n-octanol/water)	1.31 (measured)

10. Stability and reactivity

Stability

Stable under normal temperatures and pressures.

Conditions to avoid

Avoid contact with heat, sparks, open flame, and static discharge. Avoid any source of ignition.

Materials to avoid

Keep away from:

strong bases
strong acids
oxidizing agents

Keep away from reactive metals (sodium, zinc, copper, calcium, etc.)

Hazardous Combustion or Decomposition Products:

Thermal decomposition products may include oxides of carbon.

Hazardous reactions

Hazardous polymerization does not occur.

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11. Toxicological information

4-Methylpentan-2-one

Oral	LD50: 4570 mg/kg, rat
Dermal	LD50: > 5000 mg/kg, rabbit
Inhalation	LC50: >8.2 and < 16.4 mg/l, rat, 4h
Skin irritation	No skin irritation.
Species	rabbit
Eye Irritation	Severe eye irritation
Species	rabbit eye
in vitro Mutagenicity	Ames test - negative with and without metabolic activation CHO cell chromosome aberration - negative Rat hepatocyte UDS - negative
in vivo Mutagenicity	Mouse micronucleus - negative
Reproductive toxicity	No toxicity to reproduction
Routes of exposure	inhalation
Species	rat
Developmental effects	no adverse developmental effects
Routes of exposure	Inhalation
Species	rat
Developmental effects	Induced developmental toxicity and malformations at high concentration (maternally toxic dose)
Routes of exposure	Inhalation
Species	rat

12. Ecological information

4-Methylpentan-2-one

Toxicity to fish	LC50: 672 mg/l (48h)
Species	Leuciscus idus (Golden orfe)
Method	DIN 38412 T.15
Toxicity to daphnia	EC50: 1550 mg/l (24h)
Species	Daphnia magna
Toxicity to algae	Toxicity Threshold: 136 mg/l (8d)
Species	Microcystis aeruginosa
Toxicity to bacteria	Toxicity Threshold: 275 mg/l (16h)
Species	Pseudomonas putida
Biodegradation	Readily biodegradable (14 d)
Method	OECD 301 C

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13. Disposal considerations

Disposal Considerations:

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

EPA Hazardous Waste Code(s): D001, U161

14. Transport information

US Department of Transportation

UN/NA Number: UN 1245
Proper Shipping Name Methyl isobutyl ketone
Hazard class 3
Packing Group II
Reportable Quantity (RQ) 5000 lbs for MIBK and 100 lbs for RCRA HAZARDOUS WASTE NO. D001

TDG

UN/NA Number: UN 1245
Proper Shipping Name METHYL ISOBUTYL KETONE
Class: 3
Packing Group: II

Mexico Transport Information

UN-No. UN 1245
Proper Shipping Name Methyl isobutyl ketone
Hazard Class 3
Packing Group II
Emergency Response Guide 127

ICAO/IATA

UN-No. UN 1245
Proper Shipping Name Methyl isobutyl ketone
Hazard Class 3
Packing group II

IMDG

UN/ID No. UN 1245
Proper Shipping Name Methyl isobutyl ketone
Hazard Class 3
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EmS Code F-E, S-D

15. Regulatory information

U.S. STATE REGULATIONS

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

4-Methylpentan-2-one 108-10-1

Pennsylvania	Listed
New York	Listed
New Jersey	Listed
Illinois	Listed
Massachusetts	Listed
Rhode Island	Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory:

We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:

4-Methylpentan-2-one 108-10-1

EPCRA Section 313	Listed
CERCLA Hazardous Substance	Listed

SARA 311:

Acute health:	Yes
Chronic health:	No
Fire:	Yes
Sudden release of pressure:	No
Reactive:	No

INTERNATIONAL REGULATIONS

International Chemical Inventory

Listed on the chemical inventories of the following countries or qualifies for an exemption:
AUSTRALIA, CHINA, CANADA, EUROPE, KOREA, PHILIPPINES, JAPAN (ENCS)

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CANADIAN REGULATIONS

WHMIS Classification: Class B, Division 2.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16. Other information

Prepared By
Product Stewardship Department
Celanese

NFPA:	Health: 2	Flammability: 3	Instability: 1
HMIS:	Health: 2	Flammability: 3	Physical hazard: 1

Changes against the previous version are marked by ***

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