

Material Safety Data Sheet

Version 3.1
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Methyl-2-pentanone

Product Number : 537713
Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd
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CANADA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Isobutyl methyl ketone
Methyl isobutyl ketone
Isopropylacetone

Formula : C₆H₁₂O
Molecular Weight : 100.16 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
4-Methylpentan-2-one			
108-10-1	203-550-1	606-004-00-4	-

3. HAZARDS IDENTIFICATION**Emergency Overview****Target Organs**

Nerves.

WHMIS Classification

B2 Flammable liquid
D1A
D2B

Flammable liquid
Highly toxic by inhalation
Moderate eye irritant

HMIS Classification

Health hazard: 4
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

Potential Health Effects

Inhalation	May be fatal if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 14 °C (57 °F) - closed cup

Ignition temperature 459 °C (858 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

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 for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
4-Methylpentan-2-one	108-10-1	TWA	50 ppm 205 mg/m ³	2004-04-30	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	75 ppm 307 mg/m ³	2004-04-30	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	75 ppm 307 mg/m ³	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	50 ppm 205 mg/m ³	2007-01-01	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	50 ppm	2006-11-29	Canada. British Columbia OEL
		STEL	75 ppm	2006-11-29	Canada. British Columbia OEL
		TWAE V	50 ppm 205 mg/m ³	2005-12-17	Canada. Ontario OELs
		STEV	75 ppm	2005-12-17	Canada. Ontario OELs
		TWAE V	50 ppm 205 mg/m ³	2006-12-29	Canada. Quebec OELs
		STEV	75 ppm 307 mg/m ³	2006-12-29	Canada. Quebec OELs

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid

Safety data

pH no data available

Melting point -80 °C (-112 °F) - lit.

Boiling point 117 - 118 °C (243 - 244 °F)

Flash point 14 °C (57 °F) - closed cup

Ignition temperature 459 °C (858 °F)

Lower explosion limit 1.2 %(V)

Upper explosion limit 8 %(V)

Vapour pressure 20 hPa (15 mmHg) at 20 °C (68 °F)

Density 0.801 g/cm³ at 25 °C (77 °F)

Water solubility ca.20 g/l

Partition coefficient:
n-octanol/water log Pow: 1.31

Relative vapour
density 3.46
 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Oxidizing agents, Strong bases

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 2,080 mg/kg

LC50 Inhalation - rat - 4 h - 8.2 - 16.4 mg/m³

LD50 Dermal - rabbit - > 16,000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Moderate eye irritation - 24 h

Sensitisation

no data available

Chronic exposure

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Developmental Toxicity - mouse - Inhalation

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - mouse - Inhalation

Specific Developmental Abnormalities: Central nervous system. Specific Developmental Abnormalities:

Musculoskeletal system. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Signs and Symptoms of Exposure

Blurred vision, Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation

May be fatal if inhaled. Causes respiratory tract irritation.

Skin

May be harmful if absorbed through skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Eyes

Causes eye irritation.

Ingestion

May be harmful if swallowed.

Target Organs

Nerves.,

Additional Information

RTECS: SA9275000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Biotic/Aerobic

Ecotoxicity effects

Toxicity to fish

LC0 - Leuciscus idus melanotus - 480 mg/l - 48 h

Toxicity to daphnia
and other aquatic
invertebrates.

EC50 - Daphnia magna (Water flea) - 1,550 - 3,623 mg/l - 24 h

Toxicity to algae

EC50 - Desmodesmus subspicatus (green algae) - 980 - 2,000 mg/l - 48 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

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. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

UN-Number: 1245 Class: 3 Packing group: II

Proper shipping name: Methyl isobutyl ketone

Reportable Quantity (RQ): 5000 lbs

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN-Number: 1245 Class: 3 Packing group: II EMS-No: F-E, S-D

Proper shipping name: METHYL ISOBUTYL KETONE

Marine pollutant: No

IATA

UN-Number: 1245 Class: 3 Packing group: II

Proper shipping name: Methyl isobutyl ketone

15. REGULATORY INFORMATION**DSL Status**

All components of this product are on the Canadian DSL list.

WHMIS Classification

B2 Flammable liquid

D1A

D2B

Flammable liquid

Highly toxic by inhalation

Moderate eye irritant

16. OTHER INFORMATION**Further information**

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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.