

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 4-Methyl-2-pentanone

Product Number : 537713
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

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

OSHA Hazards

Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Irritant

Target Organs

Nerves.

HMIS Classification

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

NFPA Rating

Health hazard: 4
Fire: 3

Reactivity Hazard: 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/m3 | 1994-09-01 | USA. ACGIH Threshold Limit Values (TLV) |
| Remarks | Substances for which there is a Biological Exposure Index or Indices (see BEI® section) | | | | |
| | | STEL | 75 ppm | 2008-01-01 | USA. ACGIH Threshold Limit Values (TLV) |
| | Eye & Upper Respiratory Tract irritation Kidney damage See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) | | | | |
| | | TWA | 50 ppm 205 mg/m3 | 1989-01-19 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | STEL | 75 ppm 300 mg/m3 | 1989-01-19 | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 100 ppm 410 mg/m3 | 1997-08-04 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| | The value in mg/m3 is approximate. | | | | |
| | | TWA | 50 ppm | 2008-01-01 | USA. ACGIH Threshold Limit Values (TLV) |
| | Eye & Upper Respiratory Tract irritation Kidney damage Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) | | | | |

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.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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

OSHA Hazards

Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Irritant

DSL Status

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

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

| | CAS-No. | Revision Date |
|----------------------|----------|---------------|
| 4-Methylpentan-2-one | 108-10-1 | 1993-04-24 |

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| | CAS-No. | Revision Date |
|----------------------|----------|---------------|
| 4-Methylpentan-2-one | 108-10-1 | 1993-04-24 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|----------------------|----------|---------------|
| 4-Methylpentan-2-one | 108-10-1 | 1993-04-24 |

New Jersey Right To Know Components

4-Methylpentan-2-one

CAS-No.
108-10-1Revision Date
1993-04-24**California Prop. 65 Components**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

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