

Chemical Safety Data Sheet MSDS / SDS

4-methylpent-3-en-2-one SDS

Revision Date:2024-04-25 Revision Number:1

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name: 4-methylpent-3-en-2-one

CAS: 141-79-7

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification**Classification of the substance or mixture**Flammable liquids, Category 3
Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Dermal
Acute toxicity - Category 4, Inhalation

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour
H302 Harmful if swallowed
H312 Harmful in contact with skin
H332 Harmful if inhaled

Precautionary statement(s)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: 4-methylpent-3-en-2-one

Common names and synonyms: 4-methylpent-3-en-2-one

CAS number: 141-79-7

EC number: 205-502-5

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Inhalation causes irritation of nose and throat, headache, dizziness, difficult breathing. Contact with liquid or concentrated vapor causes severe eye irritation. Liquid irritates skin. Ingestion causes irritation of mouth and stomach. (USCG, 1999)

Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... Anticipate seizures and treat if necessary ... For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport ... Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Turpentine, terpenes, and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Use dry chemical, foam, carbon dioxide, or water spray. Water may be ineffective. Use water spray to keep fire-exposed containers cool.

Specific hazards arising from the chemical

Behavior in Fire: Vapor is heavier than air and may travel a considerable distance to a source of ignition and flash back. (USCG, 1999)

Special protective actions for fire-fighters

Use alcohol-resistant foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: self-contained breathing apparatus. Ventilation. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

Methods and materials for containment and cleaning up

Eliminate all ignition sources. Stop or control the leak, if it can be done without undue risk. Use appropriate foam to blanket release and suppress vapors. Approach release from upwind. Absorb in noncombustible material for proper disposal.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 25°C use a closed system, ventilation and explosion-proof electrical equipment. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants. Cool. Keep in the dark. Fireproof. Separated from strong oxidants. Cool. Keep in the dark.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 15 ppm as TWA; 25 ppm as STEL. MAK: 8.1 mg/m³, 2 ppm; peak limitation category: I(2); skin absorption (H); pregnancy risk group: D

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid.
Colour:	Colourless to light yellow liquid.
Odour:	... spearmint ...
Melting point/freezing point:	-41.5 °C
Boiling point or initial boiling point and boiling range:	130.44 °C. Atm. press.:101.325 kPa. Remarks:Initial extrapolated temperature.;135.75 °C. Atm. press.:101.325 kPa. Remarks:Peak temperature.
Flammability:	Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.
Lower and upper explosion limit/flammability limit:	Lower flammable limit: 1.4% by volume; Upper flammable limit: 7.2% by volume

Flash point:	25 °C. Atm. press.:101.3 kPa.
Auto-ignition temperature:	335 °C. Atm. press.:1 013 hPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	kinematic viscosity (in mm ² /s) = 0.717. Temperature:20.15°C.;kinematic viscosity (in mm ² /s) = 0.583. Temperature:40.15°C.
Solubility:	Miscible with water
Partition coefficient n-octanol/water:	log Pow = 1.37.
Vapour pressure:	1 490 Pa. Temperature:20 °C.;1 931 Pa. Temperature:25 °C.
Density and/or relative density:	0.859. Temperature:15 °C.
Relative vapour density:	3.4 (Air = 1)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

1400 ppm [Based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.]

The substance can presumably form explosive peroxides. Reacts violently with strong oxidants. Attacks many plastics.

Chemical stability

no data available

Possibility of hazardous reactions

Flammable liquid. Mixing MESITYL OXIDE in equal molar proportions with any of the following substances in a closed container caused the temperature and pressure to increase: 2-aminoethanol, chlorosulfonic acid, ethylene diamine, nitric acid, oleum, or sulfuric acid [NFPA 1991].

Conditions to avoid

no data available

Incompatible materials

Mixing mesityl oxide and 2-aminoethanol /or chlorosulfonic acid or ethylene diamine or nitric acid or oleum or sulfuric acid/ in closed container caused temp and pressure to incr.

Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (female) - 300 - 2 000 mg/kg bw.

Inhalation: LC50 - rat (male) - 1 130 ppm.

Dermal: LD50 - rabbit - 5 150 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. Exposure far above the OEL could cause unconsciousness. If swallowed the substance may cause vomiting and could result in aspiration pneumonitis.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the liver, kidneys and lungs.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Danio rerio (previous name: Brachydanio rerio) - 72.93 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 89.1 mg/L - 48 h.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - > 100 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 1 000 mg/L - 3 h. Remarks: Respiration rate.

Persistence and degradability

AEROBIC: Using a standard BOD technique with sewage inoculum, a theoretical BOD of 74% was determined for mesityl oxide over

a 5-day incubation period (1). Using a standard BOD technique with activated sewage sludge inoculum, a theoretical BOD of at least 30% was measured for mesityl oxide over a 14-day incubation period(2).

Bioaccumulative potential

An estimated BCF of 1.9 was calculated in fish for mesityl oxide(SRC), using a water solubility of 28,900 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of mesityl oxide is estimated as 15(SRC), using a water solubility of 28,900 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that mesityl oxide is expected to have very high mobility in soil.

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN1229 (For reference only, please check.)

IMDG: UN1229 (For reference only, please check.)

IATA: UN1229 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: MESITYL OXIDE (For reference only, please check.)

IMDG: MESITYL OXIDE (For reference only, please check.)

IATA: MESITYL OXIDE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)

IMDG: 3 (For reference only, please check.)

IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: No

IMDG: No

IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pagelD=0&request_locale=en

CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website:
<http://www.phmsa.dot.gov/hazmat/library/erg>

Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Other melting points: -59°C .Use of alcoholic beverages enhances the harmful effect. Depending on the degree of exposure, periodic medical examination is indicated. Check for peroxides prior to distillation; eliminate if found. Do NOT take working clothes home.

Disclaimer: 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. We as supplier shall not be held liable for any