

# SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

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## 1. Identification

### 1.1 GHS Product identifier

Product name 4-Methyl-3-penten-2-one

### 1.2 Other means of identification

Product number -

Other names Mesityl Oxide

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses For industry use only. Food additives -> Flavoring Agents

Uses advised against no data available

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## 2. Hazard identification

### 2.1 Classification of the substance or mixture

Flammable liquids, Category 3

Acute toxicity - Oral, Category 4

Acute toxicity - Dermal, Category 4

Acute toxicity - Inhalation, Category 4

### 2.2 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.

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 skin with

water [or shower].

P370+P378 In case of fire: Use ... to extinguish.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/...if you feel unwell.

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P312 Call a POISON CENTER/doctor/...if you feel unwell.

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 ...

## 2.3 Other hazards which do not result in classification

none

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## 3. Composition/information on ingredients

### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
4-Methyl-3-penten-2-one	4-Methyl-3-penten-2-one	141-79-7	none	100%

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## 4. First-aid measures

### 4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

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

In case of skin contact

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

In case of eye contact

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

If swallowed

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

## 4.2 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)

## 4.3 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/

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## 5. Fire-fighting measures

### 5.1 Extinguishing media

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.

## 5.2 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)

## 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2 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.

### 6.3 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.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 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.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 10 ppm (40 mg/cu m).

Biological limit values

no data available

### 8.2 Appropriate engineering controls

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

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

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

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## 9. Physical and chemical properties

Physical state	COLOURLESS VISCOUS LIQUID, WITH CHARACTERISTIC ODOUR. DARKENS ON STANDING
Colour	Oily, colorless to light-yellow liquid
Odour	... spearmint ...
Melting point/ freezing point	247°C(lit.)
Boiling point or initial boiling point and boiling range	130°C
Flammability	Class IC Flammable Liquid: Fl.P. at or above 22.78°C and below 37.78°C.Flammable.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 1.4% by volume; Upper flammable limit: 7.2% by volume
Flash point	27°C(lit.)
Auto-ignition temperature	344.44°C (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.0060 cP at 20°C
Solubility	3 % (NIOSH, 2016)
Partition coefficient n-octanol/water (log value)	log Kow = 1.37 (est)
Vapour pressure	8.76mmHg at 25°C
Density and/or relative density	0.854
Relative vapour density	3.4 (Air = 1)
Particle characteristics	no data available

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## 10. Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 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].

### 10.4 Conditions to avoid

no data available

### 10.5 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.

### 10.6 Hazardous decomposition products

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

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## 11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 655 mg/kg
- Inhalation: LC50 Rat inhalation 1130 ppm/4 hr
- Dermal: no data available

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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

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## 12. Ecological information

### 12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

### 12.2 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).

### 12.3 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).

### 12.4 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.

## 12.5 Other adverse effects

no data available

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## 13. Disposal considerations

### 13.1 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.

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## 14. Transport information

### 14.1 UN Number

ADR/RID: UN1229

IMDG: UN1229

IATA: UN1229

### 14.2 UN Proper Shipping Name

ADR/RID: MESITYL OXIDE

IMDG: MESITYL OXIDE

IATA: MESITYL OXIDE

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

### 14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

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## 15. Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
4-Methyl-3-penten-2-one	4-Methyl-3-penten-2-one	141-79-7	none
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

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## 16. Other information

Information on revision

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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?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=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/>

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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 damage resulting from handling or from contact with the

above product.