ChemicalBook

# Chemical Safety Data Sheet MSDS / SDS

# 2-Butanone peroxide

Revision Date:2026-06-06 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

| | |
|---|---|
| Product name | : 2-Butanone peroxide |
| CBnumber | : CB6317379 |
| CAS | : 1338-23-4 |
| EINECS Number | : 215-661-2 |
| Synonyms | : methyl ethyl ketone peroxide,MEKP |

### 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 |
| Address | : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing |
| Telephone | : 010-86108875 |

## SECTION 2: Hazards identification

### Classification of the substance or mixture

Organic peroxides, Type D

Acute toxicity - Category 4, Oral

Skin corrosion, Sub-category 1B

Serious eye damage, Category 1

Acute toxicity - Category 4, Inhalation

### Label elements

**Pictogram(s)**



Signal word Danger

**Hazard statement(s)**

H226 Flammable liquid and vapour

H242 Heating may cause a fire

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

**Precautionary statement(s)**

P220 Keep/Store away from clothing/…/combustible materials.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P310 Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P410 Protect from sunlight.

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

P411+P235 Store at temperatures not exceeding … oC/…oF. Keep cool.

**Prevention**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P234 Keep only in original packaging.

P235 Keep cool.

P240 Ground and bond container and receiving equipment.

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.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

**Response**

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

P301+P317 IF SWALLOWED: Get medical help.

P330 Rinse mouth.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P317 Get medical help.

**Storage**

P403 Store in a well-ventilated place.

P410 Protect from sunlight.

P411 Store at temperatures not exceeding …°C/…°F.

P420 Store separately.

P405 Store locked up.

**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

no data available

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## SECTION 3: Composition/information on ingredients

### Substance

| | |
|---|---|
| Product name | : 2-Butanone peroxide |
| Synonyms | : methyl ethyl ketone peroxide,MEKP |
| CAS | : 1338-23-4 |
| EC number | : 215-661-2 |
| MF | : C8H18O6 |
| MW | : 210.22 |

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## SECTION 4: First aid measures

### Description of first aid measures

**If inhaled**

Fresh air, rest. Half-upright position. Refer for medical attention.

**Following skin contact**

Remove contaminated clothes. Rinse skin with plenty of water or shower. 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 one or two glasses of water to drink. Do NOT induce vomiting. Refer for medical attention .

### Most important symptoms and effects, both acute and delayed

Extremely destructive to tissue of the mucous membranes, upper respiratory tract, eyes, and skin. Symptoms of exposure include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. (USCG, 1999)

### Indication of any immediate medical attention and special treatment needed

Peroxides should be washed promptly from the skin to prevent irritation. In the case of eye contact, the eyes should be flushed immediately with large amounts of water, and medical attention should be obtained. ... Medical attention should also be obtained in case of accidental ingestion. ... Peroxides, Organic and Inorganic

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## SECTION 5: Firefighting measures

### Extinguishing media

In case of fire, water should be applied by the sprinkler system or by hose from a safe distance, preferably with a fog nozzle. Foam may be

necessary instead if the peroxide is diluted in a low density flammable solvent. Portable extinguishers should not be used except for very small fires. Peroxides threatened by fire should be wetted from a safe distance for cooling. Peroxides, Organic and Inorganic

### Specific Hazards Arising from the Chemical

Behavior in Fire: Explosive. (USCG, 1999)

### Advice for firefighters

Use water spray, powder, carbon dioxide, dry sand, foam. Combat fire from a sheltered position.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking and spilled liquid in sealable plastic containers as far as possible. Do NOT absorb in saw-dust or other combustible absorbents.

### Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Collect leaking and spilled liquid in sealable plastic containers as far as possible. Do NOT absorb in saw-dust or other combustible absorbents.

### Methods and materials for containment and cleaning up

Spills should be cleaned up promptly using non-sparking tools and an inert, moist diluent such as vermiculite or sand. Sweepings may be placed in open containers or polyethylene bags and the area washed with water and detergent. Spilled, contaminated, waste or questionable peroxides should be destroyed. Peroxides, Organic and Inorganic

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## SECTION 7: Handling and storage

### Precautions for safe handling

NO open flames. NO contact with acids, bases, reducing agents or hot surfaces. 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

Store only if stabilized. Well closed. See Chemical Dangers.

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## SECTION 8: Exposure controls/personal protection

### Control parameters

**Occupational Exposure limit values**

TLV: 0.2 ppm as STEL

**Biological limit values**

no data available

### Exposure 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

**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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

| | |
|---|---|
| Physical state | Liquid |
| Colour | Colorless liquid |
| Odour | Typical odor-resembles that of acetone. |
| Melting point/freezing point | 110°C |
| Boiling point or initial boiling point and boiling range | 19°C |
| Flammability | Combustible Liquid |
| Lower and upper explosion limit/flammability limit | no data available |
| Flash point | 74°C |
| Auto-ignition temperature | 1032° F Component 2 (83.33%: LACTOSE) (NTP, 1992) |
| Decomposition temperature | >80°C |
| pH | no data available |
| Kinematic viscosity | no data available |
| Solubility | 1 to 5 mg/mL at 72° F (NTP, 1992) |
| Partition coefficient n-octanol/water | no data available |
| Vapour pressure | 8.05E-05mmHg at 25°C |
| Density and/or relative density | 0.99g/mLat 25°C |
| Relative vapour density | Component 2 (83.33%: LACTOSE): 6.69 (NTP, 1992) (Relative to Air) |
| Particle characteristics | no data available |

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## SECTION 10: Stability and reactivity

### Reactivity

Heating may cause violent combustion or explosion. On combustion, forms toxic and corrosive gases. The substance is a strong oxidant. It reacts violently with combustible and reducing materials, amines, metals, strong acids and strong bases. This generates fire and explosion hazard.

### Chemical stability

Unstable agent which like hydrogen peroxide releases oxygen.

### Possibility of hazardous reactions

METHYL ETHYL KETONE PEROXIDE is a strong oxidizing agent. May be ignited by heat, sparks or flame and undergoes self-accelerating decomposition. Explosive decomposition occurs at 230° F. Sensitive to sunlight. Ignition and/or explosion may occur if mixed with readily oxidizable materials. Reacts with combustible materials such as wood, cloth or organic materials, with chlorine, and with metals (iron, copper and their alloys and aluminum and its alloys). Incompatible with strong oxidizing agents, strong reducing agents, natural rubbers, synthetic rubbers and chemical accelerators. Incompatible with heavy metals, acids and bases.

### Conditions to avoid

no data available

### Incompatible materials

Vigorous decomp can be stimulated by even trace amt of a wide variety of contaminants, such as strong acids, bases, metals, metal alloys and salts, sulfur cmpd, amines, accelerators or reducing agents. This is particularly true of methyl ethyl ketone and benzoyl peroxides, which are intentionally stimulated to decomp @ room temp using small amt of accelerators.

### Hazardous decomposition products

no data available

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 6.86 ml/kg
- Inhalation: LC50 Mouse /inhalation/ 170 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

The substance is corrosive to the eyes, skin and respiratory tract. Corrosive on ingestion.

### STOT-repeated exposure

no data available

### Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

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## SECTION 12: Ecological information

### 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

### Persistence and degradability

no data available

### Bioaccumulative potential

An estimated BCF of 13 was calculated for the 2-butanone peroxide mixture(SRC), using an estimated log Kow of 2(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. Chemical degradation is expected to be the dominant fate process in water because of reaction with organic matter and therefore, it is doubtful that un-reacted 2-butanone peroxide would be biologically available(SRC).

### Mobility in soil

2-Butanone peroxide is a mixture dimers (50%), trimers (25%), and monomer peroxy compounds(3). Using a structure estimation method based on molecular connectivity indices(1), the Koc for 2-butanone peroxide can be estimated to range from 10 to 11,000(SRC). According to a classification scheme(2), this estimated Koc range suggests that some portions of the 2-butanone peroxide mixture are expected to have very high mobility in soil, whereas other portions of the mixture are expected to be essentially immobile. 2-Butanone peroxide is a strong oxidizing agent(3) and may decompose when brought in contact with organic materials(SRC).

### Toxics Screening Level

The initial threshold screening level (ITSL) for Methyl Ethyl Ketone Peroxide is 15 µg/m3 based on 8-hour averaging time.

### Other adverse effects

no data available

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## 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.

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## SECTION 14: Transport information

### UN Number

ADR/RID: UN3107 (For reference only, please check.)

IMDG: UN3107 (For reference only, please check.)

IATA: UN3107 (For reference only, please check.)

### UN Proper Shipping Name

ADR/RID: ORGANIC PEROXIDE TYPE E, LIQUID (For reference only, please check.)

IMDG: ORGANIC PEROXIDE TYPE E, LIQUID (For reference only, please check.)

IATA: ORGANIC PEROXIDE TYPE E, LIQUID (For reference only, please check.)

### Transport hazard class(es)

ADR/RID: 5.2 (For reference only, please check.)

IMDG: 5.2 (For reference only, please check.)

IATA: 5.2 (For reference only, please check.)

### Packing group, if applicable

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

IMDG: (For reference only, please check.)

IATA: (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?

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/

## Other Information

The occupational exposure limit value should not be exceeded during any part of the working exposure.Technical product is sold with 40-60% of diluent (for example, dimethyl phthalate, cyclohexanol peroxide, diallyl phthalate) to reduce potential explosion hazard.An added stabilizer or inhibitor can influence the toxicological properties of this substance, consult an expert.Rinse contaminated clothing with plenty of water because of fire hazard.Other UN numbers 3105, 3107 for Organic peroxide.