

## Chemical Safety Data Sheet MSDS / SDS

**Potassium permanganate**

Revision Date:2024-08-31 Revision Number:1

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

Product name : Potassium permanganate  
CBnumber : CB7775235  
CAS : 7722-64-7  
EINECS Number : 231-760-3  
Synonyms : Potassium permanganate,Permanganic acid (HMnO4), potassium salt (1:1)

**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 : 400-158-6606

**SECTION 2: Hazards identification****GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

**Precautionary statements**

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

P221 Take any precaution to avoid mixing with combustibles/...

**Hazard statements**

H272 May intensify fire; oxidizer

H302 Harmful if swallowed

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

**SECTION 3: Composition/information on ingredients**

## Substance

Product name	: Potassium permanganate
Synonyms	: Potassium permanganate, Permanganic acid (HMnO <sub>4</sub> ), potassium salt (1:1)
CAS	: 7722-64-7
EC number	: 231-760-3
MF	: KMnO <sub>4</sub>
MW	: 158.034

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Potassium oxides Manganese/manganese oxides Not combustible.

Has a fire-promoting effect due to release of oxygen. Ambient fire may liberate hazardous vapours.

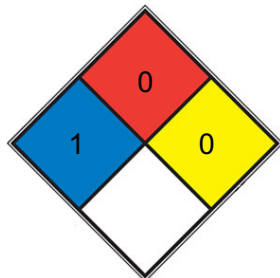
### Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

### NFPA 704



HEALTH 1 Exposure would cause irritation with only minor residual injury (e.g. [acetone](#), sodium bromate, potassium chloride)

Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete,

FIRE 0 stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,[N2](#))

SPEC.

HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

## Advice on safe handling

Work under hood. Do not inhale substance/mixture.

## Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

## Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

## Conditions for safe storage, including any incompatibilities

## Storage conditions

Tightly closed. Do not store near combustible materials.

## Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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# SECTION 8: Exposure controls/personal protection

## control parameter

### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

## Exposure controls

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

#### Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrif? L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0,11 mm Break through time: 480 min

Material tested:KCL 741 Dermatrif? L

### Body Protection

protective clothing

### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	solid
Odour	No data available
Odour Threshold	No data available
pH	8 (H <sub>2</sub> O, 20°C)
Melting point/freezing point	240°C
Initial boiling point and boiling range	No data available
Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable.
Upper/lower flammability or explosive limits	No data available
Vapour pressure	<0.01 hPa (20 °C)
Vapour density	No data available
Relative density	2.703
Water solubility	H <sub>2</sub> O: 0.1 M at 20 °C, complete, violet
Partition coefficient: n-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 2.

### Other safety information

No data available

## SECTION 10: Stability and reactivity

### Reactivity

No data available

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Risk of explosion with:

powdered aluminium Ammonia

ammonium compounds arsenic Dimethylformamide acetic acid

Acetic anhydride formaldehyde oxidisable substances Nitro compounds phosphorus

pyridine

strong reducing agents hydrochloric acid sulfur

Titanium sugars

ammonium nitrate sulfuric acid Combustible Liquids Organic Substances mineral acids anhydrides

mineral wool Alcohols with

sulfuric acid alkali salts with sulfuric acid

Risk of ignition or formation of inflammable gases or vapours with: Acetaldehyde

Alcohols antimony Aldehydes silanes

dimethyl sulfoxide Ethylene glycol ethanol

Hydrogen fluoride organic solvent glycerol

hydroxylamine Organic Substances oxalic acid

sulfuric acid hydrogen sulphide hydrogen peroxide triethanolamine Esters

glycerol with sulfuric acid sulfuric acid with

Organic Substances Exothermic reaction with:

Reducing agents Nitric acid carbides

Generates dangerous gases or fumes in contact with: Hydrogen chloride gas

### Conditions to avoid

no information available

### Incompatible materials

No data available

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

## Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - 750 mg/kg

Remarks: (RTECS)

LD50 Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

### Skin corrosion/irritation

Skin - Rabbit

Result: Corrosive after 4 hours or less of exposure (OECD Test Guideline 404)

### Serious eye damage/eye irritation

Causes serious eye damage.

### Respiratory or skin sensitization

(OECD Test Guideline 406)

### Germ cell mutagenicity

Ames test

Escherichia coli/Salmonella typhimurium Result: negative

In vitro mammalian cell gene mutation test Mouse lymphoma test

Result: negative

OECD Test Guideline 474

Rat - male and female - Bone marrow Result: negative

### Carcinogenicity

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

### Reproductive toxicity

Suspected of damaging the unborn child.

### Specific target organ toxicity - single exposure

No data available

### Specific target organ toxicity - repeated exposure

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Brain

### Aspiration hazard

No data available

### Toxicity

LD50 orally in rats: 1.09 g/kg (Smyth)

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## SECTION 12: Ecological information

### Toxicity

#### Toxicity to fish

semi-static test LC50 - Poecilia reticulata (guppy) - 0,47 mg/l - 96 h (OECD Test Guideline 203)

#### Toxicity to daphnia and other aquatic invertebrates

semi-static test EC50 - Daphnia magna (Water flea) - 0,06 mg/l - 48 h

(OECD Test Guideline 202)

#### Toxicity to algae

static test ErC50 - Desmodesmus subspicatus (green algae) - 0,8 mg/l - 72 h

(OECD Test Guideline 201)

static test NOEC - Desmodesmus subspicatus (green algae) - 0,32 mg/l - 72 h

(OECD Test Guideline 201)

#### **Toxicity to bacteria**

static test EC50 - activated sludge - 164 mg/l - 180 min (OECD Test Guideline 209)

#### **Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

#### **Bioaccumulative potential**

#### **Mobility in soil**

#### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Other adverse effects**

No data available

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## SECTION 13: Disposal considerations

#### **Waste treatment methods**

##### **Incompatibilities**

Potassium permanganate is a powerful oxidizing agent, that is, it will initiate a fire or explosion if brought into contact with reducing materials; combustibles, organic materials; strong acids; or oxidizable solid, liquid or gas; glycerin, and any finely divided combustible material. It will decompose, and release oxygen, if brought into contact with heat, alcohol, acids, ferrous salts, etc.

##### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

##### **Waste Disposal**

React with reducing agent, neutralize and flush to sewer

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## SECTION 14: Transport information

#### **UN number**

ADR/RID: 1490 IMDG: 1490 IATA: 1490

#### **UN proper shipping name**

ADR/RID: POTASSIUM PERMANGANATE IMDG: POTASSIUM PERMANGANATE

IATA: Potassium permanganate



14.3	Transport hazard class(es) ADR/RID: 5.1 IMDG: 5.1	IATA: 5.1
14.4	Packaging group ADR/RID: II IMDG: II	IATA: II
14.5	Environmental hazards ADR/RID: yes IMDG Marine pollutant: yes	IATA: no
14.6	Special precautions for user No data available	

## SECTION 15: Regulatory information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

EC Inventory:Listed.

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

## SECTION 16: Other information

### Abbreviations and acronyms

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

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%

IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

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

STEL: Short term exposure limit

TWA: Time Weighted Average

### References

**[1]** CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

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

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

【4】 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)

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

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

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

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

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

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### **Other Information**

Rinse contaminated clothing with plenty of water because of fire hazard.

#### **Disclaimer:**

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.