

## Chemical Safety Data Sheet MSDS / SDS

**Potassium persulfate**

Revision Date:2025-02-01 Revision Number:1

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

Product name : Potassium persulfate  
CBnumber : CB6854294  
CAS : 7727-21-1  
EINECS Number : 231-781-8  
Synonyms : Potassium Persulfate,KPS

**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**

P405 Store locked up.

P342+P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

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

Continuerinsing.

P284 Wear respiratory protection.

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

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

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

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

**Hazard statements**

H335 May cause respiratory irritation  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H319 Causes serious eye irritation  
H317 May cause an allergic skin reaction  
H315 Causes skin irritation  
H302 Harmful if swallowed  
H272 May intensify fire; oxidizer

---

## SECTION 3: Composition/information on ingredients

### Substance

Product name : Potassium persulfate  
Synonyms : Potassium Persulfate,KPS  
CAS : 7727-21-1  
EC number : 231-781-8  
MF : K<sub>2</sub>O<sub>8</sub>S<sub>2</sub>  
MW : 270.32

---

## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor

#### 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. Consult a physician.

#### In case of eye contact

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

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 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

---

## 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

Sulfur oxides Potassium oxides

Container explosion may occur under fire conditions. 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

Suppress (knock down) gases/vapors/mists with a water spray jet. 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)

**FIRE 0** Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, 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.**

---

## 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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## **Reference to other sections**

For disposal see section 13.

---

# 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. Keep locked up or in an area accessible only to qualified or authorized persons. Do not store near combustible materials.

Moisture sensitive.

### **Specific end use(s)**

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

---

# 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). Safety glasses

#### **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 Dermatril? 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 Dermatril? 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 P2

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.

---

## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	white powder
Odour	odorless
Odour Threshold	Not applicable d) pH 2,5 - 4,5 at 27 g/l at 25 °C Melting point/freezing point Initial boiling point and boiling range Melting point: 100 °C No data available Flash point Not applicable Evaporation rate No data available Flammability (solid, gas) Upper/lower flammability or explosive limits The product is not flammable. - Flammability (solids) No data available Vapour pressure < 0,1 hPa at 25 °C - OECD Test Guideline 104 Vapour density 9,33 - (Air = 1.0) Relative density 1,39 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.3 Water solubility 27 g/l at 20 °C - completely soluble Partition coefficient: n-octanol/water Autoignition temperature Decomposition temperature Not applicable for inorganic substances >600 °C DIN 51794 does not ignite 170 °C - 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 3.
Melting point/freezing point	Melting point: 100 °C
Initial boiling point and boiling range	1067 °C

Flash point	Not applicable
Evaporation rate	No data available
Flammability (solid, gas)	The product is not flammable. - Flammability (solids)
Upper/lower flammability or explosive limits	No data available
Vapour pressure	< 0,1 hPa at 25 °C - OECD Test Guideline 104
Vapour density	9,33 - (Air = 1.0)
Relative density	1,39 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.3
Water solubility	27 g/l at 20 °C - completely soluble
Partition coefficient: n-octanol/water	Not applicable for inorganic substances
Autoignition temperature	>600 °C DIN 51794 does not ignite
Decomposition temperature	170 °C -
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

### Other safety information

Relative vapor density

9,33 - (Air = 1.0)

## 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 ignition or formation of flammable gases or vapours with: Exothermic reaction with:

Reducing agents combustible substances Sodium hydroxide Potassium hydroxide alkali hydroxides

Water

### Conditions to avoid

Exposure to moisture. Heat. no information available

### Incompatible materials

No data available

### Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - 700 mg/kg (OECD Test Guideline 401)

Remarks: (in analogy to similar compounds)

The value is given in analogy to the following substances: Ammonium peroxodisulphate LC50 Inhalation - Rat - male and female - 4 h - >= 2,95 mg/l

(US-EPA)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate Inhalation: Irritating to respiratory system.

LD50 Dermal - Rat - male and female - > 2.000 mg/kg (US-EPA)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

#### Skin corrosion/irritation

Causes skin irritation. (Regulation (EC) No 1272/2008, Annex VI)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation. (OECD Test Guideline 405)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate (Regulation (EC) No 1272/2008, Annex VI)

#### Respiratory or skin sensitization

(OECD Test Guideline 406)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Metabolic activation: with and without metabolic activation Result: negative

Remarks: (in analogy to similar products) (ECHA)

The value is given in analogy to the following substances: disodium peroxodisulphate Test Type: unscheduled DNA synthesis assay

Test system: rat hepatocytes Method: US-EPA

Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow Application Route: Intraperitoneal Method: OECD Test Guideline 474 Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate

Test Type: unscheduled DNA synthesis assay Species: Rat

Cell type: Liver cells Application Route: Oral

Method: OECD Test Guideline 486 Result: negative

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: disodium peroxodisulphate

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

May cause respiratory irritation. - Respiratory system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Toxicity**

LD50 orally in Rabbit: 802 mg/kg

---

## SECTION 12: Ecological information

**Toxicity****Toxicity to fish**

static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 76,3 mg/l

- 96 h

Remarks: (in analogy to similar products) (ECHA)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

**Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - *Daphnia magna* (Water flea) - 120 mg/l - 48 h Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

**Toxicity to algae**

static test ErC50 - *Phaeodactylum tricorutum* - 320 mg/l - 72 h (OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

**Toxicity to bacteria**

static test EC50 - *Pseudomonas putida* - 36 mg/l - 18 h Remarks: (in analogy to similar products)

(ECHA)

The value is given in analogy to the following substances: Ammonium peroxodisulphate

**Persistence and degradability**

The methods for determining biodegradability are not applicable to inorganic substances.

**Bioaccumulative potential**



No data available

### **Mobility in soil**

No data available

### **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

---

## SECTION 13: Disposal considerations

### **Waste treatment methods**

#### **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.

#### **Incompatibilities**

A strong oxidizer. Incompatible with combustible, organic or other readily oxidizable materials; sulfur, metallic dusts, such as aluminum dust; chlorates and perchlorates. Attacks chemically active metals. Keep away from moisture.

#### **Waste Disposal**

Use large volumes of reducing agents (bisulfites, e.g.). Neutralize with soda ash and drain into sewer with abundant water.

---

## SECTION 14: Transport information

### **UN number**

ADR/RID: 1492 IMDG: 1492 IATA: 1492

### **UN proper shipping name**

ADR/RID: POTASSIUM PERSULPHATE IMDG: POTASSIUM PERSULPHATE

IATA: Potassium persulphate

14.3	Transport hazard class(es) ADR/RID: 5.1 IMDG: 5.1	IATA: 5.1
14.4	Packaging group ADR/RID: III IMDG: III	IATA: III
14.5	Environmental hazards ADR/RID: no IMDG Marine pollutant: no	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. The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential. Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance. Do NOT take working clothes home.

**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.