ChemicalBook

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	: 010-86108875

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	: K2O8S2
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.

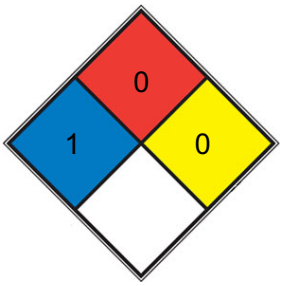
Advice for firefighters

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

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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). 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).

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).

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 entrepeneur 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 51794does 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 51794does 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 inflammable 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 peroxodisulphateTest 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 tricornutum - 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 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

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

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

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

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

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

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

EC Inventory:Listed.

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

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

【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.