



Safety Data Sheet

Potassium persulfate

Section 1: Chemical Product and Company Identification

Product Name: Potassium persulfate

Catalog Codes: 459

CAS#: 7727-21-1

RTECS: SE0400000

Synonym: Potassium peroxodisulfate

Chemical Name: Potassium peroxodisulfate

Chemical Formula: $K_2O_8S_2$

Contact Information:

Email: info@drm-chem.com

Address: #7, Afshar javan Alley, Sohrevardi St, Tehran, Iran

post code: 1551818111

Tehran Sales: +98 21 88177760

Order Online: Drm-chem.com

Section 2: Composition and Information on Ingredients

Composition:

| Name | CAS # | % by Weight |
|----------------------|-----------|-------------|
| Potassium persulfate | 7727-21-1 | 100 |

Toxicological Data on Ingredients: LD50 Oral - Rat - female - 700 mg/kg. LD50 Dermal - Rat - male and female - > 2.000 mg/kg.

Section 3: Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Oxidizing solids (Category 3), H272

Acute toxicity, Oral (Category 4), H302

Skin irritation (Category 2), H315

Eye irritation (Category 2), H319

Respiratory sensitization (Category 1), H334

Skin sensitization (Category 1), H317

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



| | |
|--------------------------------|--|
| Signal word | Danger |
| Hazard statement(s) | |
| H272 | May intensify fire; oxidizer. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| Precautionary statement(s) | |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P280 | Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. |
| P301 + P312 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. |
| P302 + P352 | IF ON SKIN: Wash with plenty of water. |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| Supplemental Hazard Statements | none |

Reduced Labeling (<= 125 ml)

Pictogram



| | |
|---------------------|--|
| Signal word | Danger |
| Hazard statement(s) | |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H317 | May cause an allergic skin reaction. |

Precautionary statement(s)

P302 + P352

P304 + P340 + P312

Supplemental Hazard Statements

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

none

Other hazards

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.

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 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. 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 3) 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.

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 3.

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.

Section 8: Exposure Controls/Personal Protection

Control parameters

Ingredients with workplace control parameters

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 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 physical and chemical properties**

| | |
|--|------------------------------|
| a) Appearance | Form: solid Color white |
| b) Odor | odorless |
| c) Odor Threshold | Not applicable |
| d) pH | 2,5 - 4,5 at 27 g/l at 25 °C |
| e) Melting point/freezing point | Melting point: 100 °C |
| f) Initial boiling point and boiling range | No data available |

| | |
|---|--|
| g) Flash point | Not applicable |
| h) Evaporation rate | No data available |
| i) Flammability (solid,gas) | The product is not flammable. - Flammability (solids) |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure | < 0,1 hPa at 25 °C - OECD Test Guideline 104 |
| l) Vapor density | 9,33 - (Air = 1.0) |
| m) Density | 2,477 g/cm ³ |
| Relative density | 1,39 at 20 °C - Regulation (EC) No. 440/2008, Annex, A.3 |
| n) Water solubility | 27 g/l at 20 °C - completely soluble |
| o) Partition coefficient: n-octanol/water | - Not applicable for inorganic substances |
| p) Autoignition temperature | > 600 °C - DIN 51794 does not ignite |
| q) Decomposition temperature | 170 °C - |
| r) Viscosity | Viscosity, kinematic: No data available Viscosity, dynamic: No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | The substance or mixture is classified as oxidizing with Bthe category 3. |

Other safety information

| | |
|------------------------|--------------------|
| Relative vapor density | 9,33 - (Air = 1.0) |
|------------------------|--------------------|

Section 10: Stability and Reactivity Data

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 - \geq 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

Freund's complete adjuvant test - Guinea pig

Result: positive

(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

Additional Information

Repeated dose toxicity - Rat - male - Oral - 90 Days - NOAEL (No observed adverse effect level) - 91 mg/kg - LOAEL (Lowest observed adverse effect level) - 200 mg/kg

Remarks: (in analogy to similar products)

RTECS: SE0400000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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

Transport hazard class(es)

ADR/RID: 5.1

IMDG: 5.1

IATA: 5.1

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: Other Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable. Take note of Dir 94/33/EC on the protection of young people at work.

Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

Section 16: Other Information

References: Not available

Other Special Considerations: Not available

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