

**SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

Revision Date 05.06.2017

Version 16.13

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**SECTION 1. Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Catalogue No. 105091

Product name Potassium peroxodisulfate for analysis EMSURE®

REACH Registration Number A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. 7727-21-1

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses Reagent for analysis  
For additional information on uses please refer to the Merck Chemicals portal ([www.merckgroup.com](http://www.merckgroup.com)).

**1.3 Details of the supplier of the safety data sheet**

Company Merck KGaA \* 64271 Darmstadt \* Germany \* Phone:+49 6151 72-0

Responsible Department LS-QHC \* e-mail: [prodsafe@merckgroup.com](mailto:prodsafe@merckgroup.com)

**1.4 Emergency telephone number** Please contact the regional company representation in your country.

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**SECTION 2. Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

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Oxidizing solid, Category 3, H272

Acute toxicity, Category 4, Oral, H302

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319

Respiratory sensitisation, Category 1, H334

Skin sensitisation, 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.

## 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

*Hazard pictograms*



*Signal word*

Danger

*Hazard statements*

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 statements*

Prevention

P280 Wear protective gloves.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for

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breathing.

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

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

## Reduced labelling (≤125 ml)

### Hazard pictograms



### Signal word

Danger

### Hazard statements

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

### Precautionary statements

P280 Wear protective gloves.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

*Index-No.* 016-061-00-1

## 2.3 Other hazards

None known.

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## SECTION 3. Composition/information on ingredients

### 3.1 Substance

Formula	K <sub>2</sub> O <sub>8</sub> S <sub>2</sub> (Hill)
Index-No.	016-061-00-1
EC-No.	231-781-8
Molar mass	270,32 g/mol

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## Hazardous components (REGULATION (EC) No 1272/2008)

### *Chemical name (Concentration)*

CAS-No.	Registration number	Classification
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Potassium persulfate (<= 100 % )		
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7727-21-1	*)	
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Oxidizing solid, Category 3, H272

Acute toxicity, Category 4, H302

Skin irritation, Category 2, H315

Eye irritation, Category 2, H319

Respiratory sensitisation, Category 1, H334

Skin sensitisation, Category 1, H317

Specific target organ toxicity - single exposure, Category 3, H335

\*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

## 3.2 Mixture

Not applicable

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## SECTION 4. First aid measures

### 4.1 Description of first aid measures

#### *General advice*

First aider needs to protect himself.

After inhalation: fresh air. Call in physician.

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

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

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

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

irritant effects, Allergic reactions, Cough, Shortness of breath

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

No information available.

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## SECTION 5. Firefighting measures

### 5.1 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.

### 5.2 Special hazards arising from the substance or mixture

Not combustible.

Has a fire-promoting effect due to release of oxygen.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:

Sulphur oxides

### 5.3 Advice for firefighters

#### *Special protective equipment 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/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

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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.

Advice for emergency responders:

Protective equipment see section 8.

## 6.2 Environmental precautions

Do not let product enter drains.

## 6.3 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.

## 6.4 Reference to other sections

Indications about waste treatment see section 13.

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## SECTION 7. Handling and storage

### 7.1 Precautions for safe handling

#### *Advice on safe handling*

Observe label precautions.

Work under hood. Do not inhale substance/mixture.

#### *Hygiene measures*

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

### 7.2 Conditions for safe storage, including any incompatibilities

#### *Storage conditions*

Dry.

Tightly closed. Do not store near combustible materials. Keep locked up or in an area accessible only to qualified or authorised persons.

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Recommended storage temperature see product label.

## 7.3 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

### 8.1 Control parameters

### 8.2 Exposure controls

#### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

#### Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

#### *Eye/face protection*

Safety glasses

#### *Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

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The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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)).

#### *Other protective equipment*

protective clothing

#### *Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

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.

#### **Environmental exposure controls**

Do not let product enter drains.

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## **SECTION 9. Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

Form	solid
Colour	white
Odour	odourless
Odour Threshold	Not applicable

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pH	ca. 3,2 at 50 g/l 20 °C
Melting point	100 °C (decomposition)
Boiling point/boiling range	Not applicable, decomposes
Flash point	does not flash
Evaporation rate	No information available.
Flammability (solid, gas)	The product is not flammable.
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure	No information available.
Relative vapour density	No information available.
Density	2,48 g/cm <sup>3</sup> at 20 °C
Relative density	No information available.
Water solubility	50 g/l at 20 °C
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	No information available.

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Decomposition temperature	ca.100 °C
Viscosity, dynamic	No information available.
Explosive properties	Not classified as explosive.
Oxidizing properties	The substance or mixture is classified as oxidizing with the category 3.

## 9.2 Other data

Ignition temperature	not combustible
Bulk density	ca.1.150 kg/m <sup>3</sup>

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## SECTION 10. Stability and reactivity

### 10.1 Reactivity

strong oxidising agent

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

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

Violent reactions possible with:

Metals, Heavy metals, silver compounds, Reducing agents, combustible substances, bases, strong alkalis, hydrides, acids, Water

### 10.4 Conditions to avoid

Temperatures above melting point.

### 10.5 Incompatible materials

no information available

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## 10.6 Hazardous decomposition products

in the event of fire: See section 5.

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## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

#### *Acute oral toxicity*

LD50 Rat: 802 mg/kg

(RTECS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

absorption

#### *Acute inhalation toxicity*

Symptoms: mucosal irritations, Cough, Shortness of breath, Lung oedema, Possible damages:, damage of respiratory tract

#### *Acute dermal toxicity*

This information is not available.

#### *Skin irritation*

Causes skin irritation.

#### *Eye irritation*

Causes serious eye irritation.

#### *Sensitisation*

Human experience

Result: positive

(Lit.)

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

#### *Germ cell mutagenicity*

This information is not available.

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## *Carcinogenicity*

This information is not available.

## *Reproductive toxicity*

This information is not available.

## *Teratogenicity*

This information is not available.

## *Specific target organ toxicity - single exposure*

May cause respiratory irritation.

Target Organs: Respiratory system

## *Specific target organ toxicity - repeated exposure*

This information is not available.

## *Aspiration hazard*

This information is not available.

## 11.2 Further information

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 12. Ecological information

### 12.1 Toxicity

#### *Toxicity to fish*

LC50 *Poecilia reticulata* (guppy): 100 mg/l; 96 h

(Hommel)

#### *Toxicity to daphnia and other aquatic invertebrates*

EC50 *Daphnia magna* (Water flea): 357 mg/l; 24 h

(Hommel)

#### *Toxicity to bacteria*

EC50 *Pseudomonas putida*: 36 mg/l

(Hommel)

### 12.2 Persistence and degradability

No information available.

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## 12.3 Bioaccumulative potential

*Partition coefficient: n-octanol/water*

Not applicable

## 12.4 Mobility in soil

No information available.

## 12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

## 12.6 Other adverse effects

Discharge into the environment must be avoided.

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## SECTION 13. Disposal considerations

*Waste treatment methods*

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.

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## SECTION 14. Transport information

### Land transport (ADR/RID)

14.1 UN number	UN 1492
14.2 Proper shipping name	POTASSIUM PERSULPHATE
14.3 Class	5.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

### Inland waterway transport (ADN)

Not relevant

### Air transport (IATA)

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**14.1 UN number** UN 1492  
**14.2 Proper shipping name** POTASSIUM PERSULPHATE  
**14.3 Class** 5.1  
**14.4 Packing group** III  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** no

## Sea transport (IMDG)

**14.1 UN number** UN 1492  
**14.2 Proper shipping name** POTASSIUM PERSULPHATE  
**14.3 Class** 5.1  
**14.4 Packing group** III  
**14.5 Environmentally hazardous** --  
**14.6 Special precautions for user** yes

EmS F-A S-Q

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Not relevant

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## SECTION 15. Regulatory information

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

#### *EU regulations*

Major Accident Hazard SEVESO III  
Legislation OXIDIZING LIQUIDS AND SOLIDS  
P8  
Quantity 1: 50 t  
Quantity 2: 200 t

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

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Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC) This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of  $\geq 0.1$  % (w/w).

### *National legislation*

Storage class 5.1B

## 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16. Other information

### Full text of H-Statements referred to under sections 2 and 3.

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.

### Training advice

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Provide adequate information, instruction and training for operators.

## Labelling

### *Hazard pictograms*



### *Signal word*

Danger

### *Hazard statements*

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 statements*

#### Prevention

P280 Wear protective gloves.

#### Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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

P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

## Key or legend to abbreviations and acronyms used in the safety data sheet

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Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

## **Regional representation**

This information is given on the authorised Safety Data Sheet for your country.

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*