# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 31.07.2018 Version 9.4

## SECTION 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

| | |
|---|---|
| Catalogue No. | 105124 |
| Product name | Potassium thiocyanate EMPLURA® |
| REACH Registration Number | 01-2119543697-26-XXXX |
| CAS-No. | 333-20-0 |

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

| | |
|---|---|
| Identified uses | Materials for use in technical applications<br>For additional information on uses please refer to the Merck Chemicals portal (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 |

### 1.4 Emergency telephone number

**Please contact the regional company representation in your country.**

## SECTION 2. Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4, Oral, H302

Acute toxicity, Category 4, Inhalation, H332

Acute toxicity, Category 4, Dermal, H312

Chronic aquatic toxicity, Category 3, H412

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*

Warning

*Hazard statements*

H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

H412 Harmful to aquatic life with long lasting effects.

EUH032 Contact with acids liberates very toxic gas.

*Precautionary statements*

Prevention

P273 Avoid release to the environment.

Response

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

**Reduced labelling (≤125 ml)**

*Hazard pictograms*

*Signal word*

Warning

*Hazard statements*

H412 Harmful to aquatic life with long lasting effects.

*Index-No.* 615-004-00-3

### 2.3 Other hazards

None known.

## SECTION 3. Composition/information on ingredients

### 3.1 Substance

| | | |
|---|---|---|
| Formula | KSCN | CKNS (Hill) |
| Index-No. | 615-004-00-3 | |
| EC-No. | 206-370-1 | |
| Molar mass | 97,18 g/mol | |

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

*Chemical name (Concentration)*

| CAS-No. | Registration number | Classification |
|---|---|---|
| Potassium thiocyanate (<= 100 % ) | | |
| 333-20-0 | 01-2119543697-26-XXXX | Acute toxicity, Category 4, H302<br>Acute toxicity, Category 4, H332<br>Acute toxicity, Category 4, H312<br>Chronic aquatic toxicity, Category 3, H412 |

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

### 3.2 Mixture

Not applicable

## SECTION 4. First aid measures

### 4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

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

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

Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

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

irritant effects, agitation, spasms, cardiovascular disorders, ataxia (impaired locomotor coordination), CNS disorders

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

No information available.

## 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.
Ambient fire may liberate hazardous vapours.
Fire may cause evolution of:
Sulphur oxides, nitrogen oxides, Hydrogen cyanide (hydrocyanic acid)

**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.

## SECTION 6. Accidental release measures

**6.1 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.

Advice for emergency responders:

Protective equipment see section 8.

**6.2 Environmental precautions**

Do not empty into 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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4 Reference to other sections**

Indications about waste treatment see section 13.

## SECTION 7. Handling and storage

**7.1 Precautions for safe handling**

*Advice on safe handling*

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

*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*

Tightly closed. Dry.

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.

## 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 |

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).

*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 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.

**Environmental exposure controls**
Do not empty into drains.

## 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 |
| pH | 5,3 - 8,5<br>at 50 g/l<br>20 °C |

| | |
|---|---|
| | 4,8<br>at 1.070 g/l<br>20,1 °C |
| Melting point | 177 °C<br>at 1.013 hPa<br>Method: OECD Test Guideline 102 |
| Boiling point/boiling range | > 400 °C<br>at 1.013 hPa<br>Method: OECD Test Guideline 103 |
| Flash point | does not flash |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | The product is not flammable.<br>Flammability (solids) |
| Lower explosion limit | Not applicable |
| Upper explosion limit | Not applicable |
| Vapour pressure | < 0,001 hPa<br>at 20 °C<br>Method: OECD Test Guideline 104<br>low |
| Relative vapour density | No information available. |
| Density | 1,91 g/cm3<br>at 20 °C<br>Method: OECD Test Guideline 109 |

| | |
|---|---|
| Relative density | No information available. |
| Water solubility | > 1.000 g/l<br>at 20 °C<br>Method: OECD Test Guideline 105 |
| Partition coefficient: n-octanol/water | No information available. |
| Auto-ignition temperature | No information available. |
| Decomposition temperature | 500 °C |
| Viscosity, dynamic | No information available. |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, Oxidizing properties). |

**9.2 Other data**

| | |
|---|---|
| Ignition temperature | not combustible |
| Bulk density | ca.750 - 1.000 kg/m3 |
| Particle size | Method: OECD Test Guideline 110<br>Not applicable |

## SECTION 10. Stability and reactivity

**10.1 Reactivity**

See section 10.3

**10.2 Chemical stability**

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

### 10.3 Possibility of hazardous reactions

A risk of explosion and/or of toxic gas formation exists with the following substances:

Acids, Strong oxidizing agents, perchloryl fluoride

Possible formation of:

Hydrogen cyanide (hydrocyanic acid)

### 10.4 Conditions to avoid

Strong heating (decomposition).

### 10.5 Incompatible materials

no information available

### 10.6 Hazardous decomposition products

in the event of fire: See section 5.

## SECTION 11. Toxicological information

### 11.1 Information on toxicological effects

*Acute oral toxicity*

LDLO human: 80 mg/kg

(RTECS)

LD50 Rat: 854 mg/kg

(RTECS)

*Acute inhalation toxicity*

Acute toxicity estimate: 1,6 mg/l; dust/mist

Expert judgement

Symptoms: Possible damages:, May cause irritation of respiratory tract.

*Acute dermal toxicity*

Acute toxicity estimate : 1.100,1 mg/kg

Expert judgement

*Skin irritation*

In vitro study

Result: No skin irritation

OECD Test Guideline 439

The value is given in analogy to the following substances: sodium thiocyanate

*Eye irritation*

In vitro study

Result: non-corrosive

OECD Test Guideline 437

The value is given in analogy to the following substances: sodium thiocyanate

*Sensitisation*

Local lymph node assay (LLNA) Mouse

Result: Does not cause skin sensitisation.

Method: OECD Test Guideline 429

The value is given in analogy to the following substances: sodium thiocyanate

*Germ cell mutagenicity*

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Human lymphocytes

Result: negative

Method: OECD Test Guideline 473

In vitro mammalian cell gene mutation test

Mouse lymphoma test

Result: negative

Method: OECD Test Guideline 476

*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*

This information is not available.

*Specific target organ toxicity - repeated exposure*

This information is not available.

*Aspiration hazard*

This information is not available.

### 11.2 Further information

After absorption of large quantities:

agitation, spasms, ataxia (impaired locomotor coordination)

Systemic effects:

CNS disorders, cardiovascular disorders

After long-term exposure to the chemical:

Changes in the blood count

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12. Ecological information

### 12.1 Toxicity

*Toxicity to fish*

LC50 Oncorhynchus mykiss (rainbow trout): 11 mg/l; 96 h

(ECOTOX Database)

static test LC50 Oncorhynchus mykiss (rainbow trout): 65 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

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

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): 2,8 mg/l; 96 h

(ECOTOX Database)

*Toxicity to fish (Chronic toxicity)*

flow-through test NOEC Pimephales promelas (fathead minnow): 1,84 mg/l; 124 d

(ECHA)

**12.2 Persistence and degradability**

*Biodegradability*

80 %; 28 d; aerobic

OECD Test Guideline 301D

The value is given in analogy to the following substances:

Readily biodegradable Ammonium thiocyanate

**12.3 Bioaccumulative potential**

No information available.

**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.

## SECTION 13. Disposal considerations

*Waste treatment methods*

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## SECTION 14. Transport information

**Land transport (ADR/RID)**

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

**Inland waterway transport (ADN)**

Not relevant

**Air transport (IATA)**

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

**Sea transport (IMDG)**

**14.1 - 14.6** Not classified as dangerous in the meaning of transport regulations.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not relevant

## 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 | Not applicable |
| 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. |
| 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 ≥ 0.1 % (w/w). |

*National legislation*
Storage class 10 - 13

### 15.2 Chemical safety assessment

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

## SECTION 16. Other information

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

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H332 | Harmful if inhaled. |
| H412 | Harmful to aquatic life with long lasting effects. |

**Training advice**
Provide adequate information, instruction and training for operators.

**Labelling**
*Hazard pictograms*

*Signal word*
Warning

*Hazard statements*
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.
H412 Harmful to aquatic life with long lasting effects.
EUH032 Contact with acids liberates very toxic gas.

*Precautionary statements*
Prevention
P273 Avoid release to the environment.

Response

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

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

Used abbreviations and acronyms can be looked up at 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.*