

# safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



## Potassium hexacyanoferrate (II) trihydrate >99 %, crystalline

article number: **7974**  
Version: **2.0 en**  
Replaces version of: 2016-09-02  
Version: (1.0)

date of compilation: 2016-09-02  
Revision: 2017-01-23

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

### 1.1 Product identifier

|                                 |   |
|---------------------------------|---|
| Identification of the substance | <b>Potassium hexacyanoferrate (II) trihydrate</b> |
| Article number                  | 7974  |
| Registration number (REACH)     | This information is not available.                |
| EC number                       | 237-722-2   |
| CAS number                      | 14459-95-1  |

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

**Identified uses:** laboratory chemical

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

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0

**Telefax:** +49 (0) 721 - 56 06 149

**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

**e-mail (competent person)** : [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

| Classification acc. to GHS |   |                           |                  |
|----------------------------|---|---------------------------|------------------|
| Section                    | Hazard class  | Hazard class and category | Hazard statement |
| 4.1C                       | hazardous to the aquatic environment - chronic hazard | (Aquatic Chronic 3)       | H412             |

#### Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

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### 2.2 Label elements

#### Labelling according to Regulation (EC) No 1272/2008 (CLP)

**Signal word** not required

#### **Hazard statements**

H412 Harmful to aquatic life with long lasting effects.

#### **Precautionary statements**

#### **Precautionary statements - prevention**

P220 Keep/store away from acids, alkalis, heavy metal salts and reducing substances.  
P273 Avoid release to the environment.

#### **Labelling of packages where the contents do not exceed 125 ml**

Signal word: Not required

H412 Harmful to aquatic life with long lasting effects.

### 2.3 Other hazards

There is no additional information.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                   |  |
|-------------------|--|
| Name of substance | Potassium hexacyanoferrate (II) trihydrate |
| EC number         | 237-722-2                                  |
| CAS number        | 14459-95-1                                 |
| Molecular formula | $K_4[Fe(CN)_6] \cdot 3H_2O$                |
| Molar mass        | 422,4 g/mol                                |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### **General notes**

Take off contaminated clothing.

#### **Following inhalation**

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### **Following skin contact**

Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

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### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

### Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

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

Diarrhoea, Vertigo, Vomiting, Irritation

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

none

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings  
water spray, foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

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

Non-combustible.

#### Hazardous combustion products

In case of fire may be liberated: nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), hydrogen cyanide (HCN, prussic acid)

### 5.3 Advice for firefighters

Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust. Avoid contact with skin, eyes and clothes.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

### 6.3 Methods and material for containment and cleaning up

#### Advices on how to contain a spill

Covering of drains.

#### Advices on how to clean up a spill

Take up mechanically. Control of dust.

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### Other information relating to spills and releases

Place in appropriate containers for disposal.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

No special measures are necessary.

#### Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

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

Store in a dry place. Protect from sunlight.

#### Incompatible substances or mixtures

Observe hints for combined storage.

#### Consideration of other advice

- **Ventilation requirements**

Use local and general ventilation.

- **Specific designs for storage rooms or vessels**

Recommended storage temperature: 15 - 25 °C.

### 7.3 Specific end use(s)

No information available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

Data are not available.

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)



#### Eye/face protection

Use safety goggle with side protection.

#### Skin protection

- **hand protection**

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

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- **type of material**

NBR (Nitrile rubber)

- **material thickness**

>0,11 mm

- **breakthrough times of the glove material**

>480 minutes (permeation: level 6)

- **other protection measures**

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

### Respiratory protection

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). Type: B-P2 (combined filters for acidic gases and particles, colour code: Grey/White).

### Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

|                 |                   |
|-----------------|-------------------|
| Physical state  | solid             |
| Colour          | light yellow      |
| Odour           | odourless         |
| Odour threshold | No data available |

#### Other physical and chemical parameters

|   |  |
|---|--|
| pH (value)                              | 9,5 (100 g/l, 25 °C)                           |
| Melting point/freezing point            | 70 °C  |
| Initial boiling point and boiling range | This information is not available.             |
| Flash point                             | not applicable                                 |
| Evaporation rate                        | no data available                              |
| Flammability (solid, gas)               | Non-flammable                                  |
| <u>Explosive limits</u>                 |  |
| • lower explosion limit (LEL)           | this information is not available              |
| • upper explosion limit (UEL)           | this information is not available              |
| Explosion limits of dust clouds         | these information are not available            |
| Vapour pressure                         | This information is not available.             |
| Density                                 | 1,85 g/cm <sup>3</sup> at 20 °C                |
| Vapour density                          | This information is not available.             |
| Bulk density                            | 1.000 kg/m <sup>3</sup>                        |
| Relative density                        | Information on this property is not available. |

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### Solubility(ies)

Water solubility 289 g/l at 20 °C  
150 g/l at 0 °C

### Partition coefficient

n-octanol/water (log KOW) This information is not available.  
Auto-ignition temperature Information on this property is not available.  
Decomposition temperature no data available  
Viscosity not relevant (solid matter)  
Explosive properties Shall not be classified as explosive  
Oxidising properties none

### 9.2 Other information

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

Exothermic reaction with: Nitrites, Oxidisers, Strong acid,  
=> Release of an acute toxic gas

### 10.4 Conditions to avoid

Direct light irradiation.

### 10.5 Incompatible materials

There is no additional information.

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Shall not be classified as acutely toxic.

| Exposure route | Endpoint | Value       | Species | Method    |
|----------------|----------|-------------|---------|-----------|
| oral           | LD50     | 3.613 mg/kg | rat     | anhydrous |

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

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### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

### Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

#### • Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

#### • Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

vomiting, nausea

#### • If in eyes

slightly irritant

#### • If inhaled

slightly irritant

#### • If on skin

data are not available

### Other information

None

## SECTION 12: Ecological information

### 12.1 Toxicity

Harmful to aquatic life with long lasting effects.

#### Aquatic toxicity (acute)

| Endpoint | Value   | Species                 | Source | Exposure time |
|----------|---------|-------------------------|--------|---------------|
| LC50     | 19 mg/l | Poecilia reticulata     |        | 96 h          |
| EC50     | 32 mg/l | Ankistrodesmus falcatus |        | 96 h          |

#### Aquatic toxicity (chronic)

May cause long-term adverse effects in the aquatic environment.

### 12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

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### 12.3 Bioaccumulative potential

Data are not available.

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

- |      |   |   |
|------|---|---|
| 14.1 | UN number   | (not subject to transport regulations)  |
| 14.2 | UN proper shipping name   | not relevant  |
| 14.3 | Transport hazard class(es)  | not relevant  |
|      | Class   | -   |
| 14.4 | Packing group   | not relevant  |
| 14.5 | Environmental hazards   | none (non-environmentally hazardous acc. to the dangerous goods regulations)          |
| 14.6 | <b>Special precautions for user</b>                                       |   |
|      |   | There is no additional information.   |
| 14.7 | <b>Transport in bulk according to Annex II of MARPOL and the IBC Code</b> |   |
|      |   | The cargo is not intended to be carried in bulk.                                      |
| 14.8 | <b>Information for each of the UN Model Regulations</b>                   |   |
|      |   | • <b>Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)</b> |
|      |   | Not subject to ADR, RID and ADN.  |



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- **International Maritime Dangerous Goods Code (IMDG)**  
Not subject to IMDG.
- **International Civil Aviation Organization (ICAO-IATA/DGR)**  
Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

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

#### Relevant provisions of the European Union (EU)

- **Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)**  
Not listed.

- **Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)**  
Not listed.

- **Regulation 850/2004/EC on persistent organic pollutants (POP)**  
Not listed.

- **Restrictions according to REACH, Annex XVII**  
not listed

- **List of substances subject to authorisation (REACH, Annex XIV)**  
not listed

**Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II**

not listed

**Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)**

not listed

**Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)**

not listed

#### National inventories

Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

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### SECTION 16: Other information

#### 16.1 Indication of changes (revised safety data sheet)

| Section | Former entry (text/value)   | Actual entry (text/value)  |
|---------|---|--|
| 3.1     | Molar mass:<br>422 g/mol  | Molar mass:<br>422,4 g/mol   |
| 8.1     | Occupational exposure limit values (Workplace Exposure Limits):<br>No data available. | Occupational exposure limit values (Workplace Exposure Limits):<br>Data are not available. |
| 9.1     | Density:<br>1,9 g/cm <sup>3</sup> at 20 °C  | Density:<br>1,85 g/cm <sup>3</sup> at 20 °C  |
| 12.1    |   | Aquatic toxicity (acute):<br>change in the listing (table)                                 |
| 14.8    |   | • International Civil Aviation Organization (ICAO-IATA/DGR):<br>Not subject to ICAO-IATA.  |
| 16      |   | Abbreviations and acronyms:<br>change in the listing (table)                               |

#### Abbreviations and acronyms

| Abbr.    | Descriptions of used abbreviations  |
|----------|---|
| ADN      | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR      | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)                                       |
| CAS      | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)  |
| CLP      | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures  |
| CMR      | Carcinogenic, Mutagenic or toxic for Reproduction   |
| DGR      | Dangerous Goods Regulations (see IATA/DGR)  |
| EINECS   | European Inventory of Existing Commercial Chemical Substances   |
| ELINCS   | European List of Notified Chemical Substances   |
| GHS      | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations   |
| IATA     | International Air Transport Association   |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA)  |
| ICAO     | International Civil Aviation Organization   |
| IMDG     | International Maritime Dangerous Goods Code   |
| MARPOL   | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")   |
| NLP      | No-Longer Polymer   |
| PBT      | Persistent, Bioaccumulative and Toxic   |
| REACH    | Registration, Evaluation, Authorisation and Restriction of Chemicals  |
| RID      | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)   |
| vPvB     | very Persistent and very Bioaccumulative  |

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### Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text  |
|------|---|
| H412 | harmful to aquatic life with long lasting effects |

### Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.