

# Safety data sheet

according to 1907/2006/EC, Article 31

Revision: 01.03.2007

Printing date 01.07.2013

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

Trade name

**Potassium hexacyanocobaltate (III)**

Stock number:

23126

CAS Number:

13963-58-1

EC number:

237-742-1

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

Identified use:

SU24 Scientific research and development

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

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
 A Johnson Matthey Company  
 Zeppelinstr. 7b  
 76185 Karlsruhe / Germany  
 Tel: +49 (0) 721 84007 280  
 Fax: +49 (0) 721 84007 300  
 Email: tech@alfa.com  
 www.alfa.com  
 Product safety Tel + +049 (0) 7275 988687-0  
 Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)  
 Poison Information Center Mainz  
 www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

Informing department:

**1.4 Emergency telephone number:****SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xn; Harmful

R20/21/22-40: Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.

Xi; Sensitising

R43: May cause sensitisation by skin contact.

**Information concerning particular hazards for human and environment:**

Not applicable

**Other hazards that do not result in classification**

No information known.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms

Signal word

Hazard statements

The substance is classified and labelled according to the CLP regulation.

GHS07, GHS08

Warning

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Precautionary statements****2.3 Other hazards**

Results of PBT and vPvB assessment

PBT:

Not applicable.

vPvB:

Not applicable.

**SECTION 3: Composition/information on ingredients****3.1 Substances**

CAS# Designation:

13963-58-1 Potassium hexacyanocobaltate (III)

Identification number(s):

237-742-1

EC number:

**SECTION 4: First aid measures****4.1 Description of first aid measures**

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

Instantly wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

Rinse opened eye for several minutes under running water. Then consult doctor.

Seek medical treatment.

After skin contact

After eye contact

After swallowing

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing agents

Use fire fighting measures that suit the environment.

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

If this product is involved in a fire, the following can be released:

Hydrogen cyanide (HCN)

Nitrogen oxides (NOx)

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## 5.3 Advice for firefighters

### Protective equipment:

Carbon monoxide and carbon dioxide

Wear self-contained breathing apparatus.

Wear full protective suit.

## SECTION 6: Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation.

### 6.2 Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach sewage system or water bodies.

Do not allow to enter the ground/soil.

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

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

### Prevention of secondary hazards:

No special measures required.

### 6.4 Reference to other sections

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

### Information about protection against explosions and fires:

The product is not flammable

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

#### Storage Requirements to be met by storerooms and containers:

No special requirements.

#### Information about storage in one common storage facility:

Store away from oxidizing agents.

Do not store together with acids.

#### Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

No further relevant information available.

### 7.3 Specific end use(s)

## SECTION 8: Exposure controls/personal protection

### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### 8.1 Control parameters

#### Components with critical values that require monitoring at the workplace:

Cyanides (as CN)  
mg/m<sup>3</sup>

Austria MAK	5 (skin)
Denmark TWA	5 (skin)
Finland TWA	5; 10-STEL
France VME	5 (skin)
Germany MAK	5 (skin)
Hungary TWA	0.3; 0.6-STEL (skin)
Netherlands MAC-TGG	5 (skin)
Poland TWA	0.3; 10-Ceiling
Sweden	5-Ceiling (skin)
Switzerland MAK-W	5; 10-STEL (skin)
United Kingdom	5-LTEL (skin)
OSHA PEL	5 (skin)

Cobalt, elemental & inorganic compounds, as Co

mg/m<sup>3</sup>

ACGIH TLV	0.02; Confirmed animal carcinogen
Austria	Carcinogen
Belgium TWA	0.05
Denmark TWA	0.05
Finland TWA	0.05 (skin)
Germany	Carcinogen
Hungary TWA	0.1; 0.2-STEL
Japan OEL	0.05; 2B-Carcinogen
Korea TLV	0.02; Confirmed animal carcinogen
Netherlands MAC-TGG	0.05
Norway TWA	0.05
Poland TWA	0.05; 0.2-STEL
Russia	0.5-STEL
Sweden NGV	0.05
Switzerland MAK-W	0.1; Carcinogen
United Kingdom TWA	0.1
USA PEL	0.1 (dust and fume)
No data	

### Additional information:

### 8.2 Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Use breathing protection with high concentrations.

#### Breathing equipment:

#### Protection of hands:

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

#### Material of gloves

#### Penetration time of glove material

#### Eye protection:

Impervious gloves

Not determined

Safety glasses

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Body protection: Protective work clothing.

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**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:**

Form: Powder  
 Colour: Light yellow  
 Smell: Odourless  
 Odour threshold: Not determined.

pH-value: Not applicable.

**Change in condition**

Melting point/Melting range: Not determined  
 Boiling point/Boiling range: Not determined  
 Sublimation temperature / start: Not determined

Flash point: Not applicable  
 Inflammability (solid, gaseous): Not determined.  
 Ignition temperature: Not determined  
 Decomposition temperature: Not determined  
 Self-inflammability: Not determined.

Danger of explosion: Product is not explosive.

**Critical values for explosion:**

Lower: Not determined  
 Upper: Not determined  
 Steam pressure: Not applicable.  
 Density at 20 °C: 1,906 g/cm<sup>3</sup>  
 Relative density: Not determined.  
 Vapour density: Not applicable.  
 Evaporation rate: Not applicable.

Solubility in / Miscibility with  
 Water: Soluble  
 Partition coefficient (n-octanol/water): Not determined.

Viscosity:  
 dynamic: Not applicable.  
 kinematic: Not applicable.

9.2 Other information No further relevant information available.

**SECTION 10: Stability and reactivity****10.1 Reactivity**

No information known.

**10.2 Chemical stability**

Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

**10.3 Possibility of hazardous reactions**

No dangerous reactions known

**10.5 Incompatible materials:**

Oxidizing agents

Acids

**10.6 Hazardous decomposition products:**

Hydrogen cyanide (prussic acid)  
 Carbon monoxide and carbon dioxide  
 Nitrogen oxides (NO<sub>x</sub>)

**SECTION 11: Toxicological information****11.1 Information on toxicological effects****Acute toxicity:**

Harmful if inhaled.  
 Harmful in contact with skin.  
 Harmful if swallowed.  
 Danger by skin resorption.

**LD/LC50 values that are relevant for classification:**

Oral LD50 1529 mg/kg (mouse)

**Skin irritation or corrosion:**

Irritant for skin and mucous membranes.

**Eye irritation or corrosion:**

Irritant effect.

**Sensitization:**

May cause an allergic skin reaction.

**Germ cell mutagenicity:**

No effects known.

**Carcinogenicity:**

Suspected of causing cancer.

**Reproductive toxicity:**

No effects known.

**Specific target organ system toxicity -****repeated exposure:**

No effects known.

**Specific target organ system toxicity - single****exposure:**

No effects known.

**Aspiration hazard:**

No effects known.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:**

No further relevant information available.

**12.2 Persistence and degradability**

No further relevant information available.

**12.3 Bioaccumulative potential**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits.  
 Water hazard class 1 (Self-assessment): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.  
 Avoid transfer into the environment.

**12.5 Results of PBT and vPvB assessment****PBT:**

Not applicable.

**vPvB:**

Not applicable.

**12.6 Other adverse effects**

No further relevant information available.

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Hand over to disposers of hazardous waste.

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Uncleaned packagings:

Must be specially treated under adherence to official regulations.  
Consult state, local or national regulations for proper disposal.

Recommendation:

Disposal must be made according to official regulations.

Recommended cleaning agent:

Water, if necessary with cleaning agent.

**SECTION 14: Transport information**UN-Number  
ADR, IMDG, IATA

None

14.2 UN proper shipping name  
ADR, IMDG, IATA

None

14.3 Transport hazard class(es)  
ADR, IMDG, IATA  
Class

None

Packing group  
ADR, IMDG, IATA

None

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Not applicable.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC  
Code

Not applicable.

Transport/Additional information:

Not dangerous according to the above specifications.

**SECTION 15: Regulatory information**

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

Australian Inventory of Chemical

Substances is listed.

Substances

Standard for the Uniform Scheduling of

Substances is not listed.

Drugs and Poisons

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.

Water hazard class:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

Other regulations, limitations and prohibitive

regulations

ELINCS (European List of Notified Chemical

Substances) is not listed.

Substances of very high concern (SVHC)

Substance is not listed.

according to REACH, Article 57

Substance is listed.

REACH - Pre-registered substances

A Chemical Safety Assessment has not been carried out.

15.2 Chemical safety assessment:

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)  
 ICAO: International Civil Aviation Organization  
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)  
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent

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