

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

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

1.1 Product identifier

Trade name: **Kaliumgold(I)cyanid 68,2% / 68,3%**
Potassium dicyanoaurate 68,2% Au / 68,3 % Au

Article number: 4010110201, 4010110101

CAS Number:
13967-50-5

EC number:
237-748-4

Registration number 01-2120130777-52

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

Sector of Use SU16 Manufacture of computer, electronic and optical products, electrical equipment

Product category PC14 Metal surface treatment products

Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC5 Mixing or blending in batch processes

PROC7 Industrial spraying

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

PROC26 Handling of solid inorganic substances at ambient temperature

Environmental release category

ERC5 Use at industrial site leading to inclusion into/onto article

ERC1 Manufacture of the substance

ERC2 Formulation into mixture

ERC8c Widespread use leading to inclusion into/onto article (indoor)

Application of the substance / the mixture Galvanic bath

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Wieland Edelmetalle GmbH

Schwenninger Str. 13

75179 Pforzheim

Telefon +49 (07231)-1393-0, Telefax +49 (07231)-1393-100

Further information obtainable from:

Wieland Edelmetalle GmbH

www.wieland-edelmetalle.de

msds@wieland-edelmetalle.de

1.4 Emergency telephone number:

Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0)6132-84463

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS06 skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 2 H330 Fatal if inhaled.

(Contd. on page 2)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

**Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au**

(Contd. of page 1)



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.
Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

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

· **Hazard pictograms**



GHS05 GHS06 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

potassium dicyanoaurate

· **Hazard statements**

H290 May be corrosive to metals.
H300+H330 Fatal if swallowed or if inhaled.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

EUH032 Contact with acids liberates very toxic gas.

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au· **vPvB:** Not applicable.

(Contd. of page 2)

SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
13967-50-5 potassium dicyanoaurate
- **Identification number(s)**
- **EC number:** 237-748-4

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
Headache
Cramp
- **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 extinguishing methods suitable to surrounding conditions.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** Hydrogen cyanide (HCN)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Pick up mechanically.

(Contd. on page 4)

Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au

(Contd. of page 3)

- Ensure adequate ventilation.
- **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 disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- Ensure good ventilation/exhaustion at the workplace.
- Prevent formation of dust.
- Open and handle receptacle with care.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Do not store together with acids.
- **Further information about storage conditions:**
- Store under lock and key and with access restricted to technical experts or their assistants only.
- Keep receptacle tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

13967-50-5 potassium dicyanoaurate

WEL	Long-term value: 5 mg/m ³ as CN; Sk
-----	---

· **DNELs**

13967-50-5 potassium dicyanoaurate

Oral	DNEL(Comm.)akut	4.5 mg/kg (-) (CN)
	DNEL(Com.)longterm	0.05 mg/kg (-) (CN)
	DNEL(Industrie) akut	4.5 mg/kg (-) (CN)
	DNEL(Indust.)longt.	0.05 mg/kg (-) (CN)

· **PNECs**

13967-50-5 potassium dicyanoaurate

PNEC (Industrie)	0.03 µg/l (H ₂ O) (CN)
PNEC (Commercial)	0.03 µg/l (H ₂ O) (CN)

- **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

(Contd. on page 5)

**Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au**

(Contd. of page 4)

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Short term filter device:

Filter P3

· **Protection of hands:**



Protective gloves

· **Material of gloves**

Butyl rubber, BR

Nitrile rubber, NBR

Natural rubber, NR

Chloroprene rubber, CR

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.

· **Penetration time of glove material**

The determined penetration times according to EN 374 part III are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

Value for the permeation: Level ≤ 6

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Not suitable are gloves made of the following materials:**

Strong material gloves

Leather gloves

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

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

· **General Information**

· **Appearance:**

Form: Crystalline

Colour: White

· **Odour:** Product specific

· **pH-value (25 g/l) at 20 °C:** 10

· **Change in condition**

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Product is not flammable.

· **Explosive properties:** Product does not present an explosion hazard.

· **Explosion limits:**

Oxidising properties None

(Contd. on page 6)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

**Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au**

(Contd. of page 5)

· Density at 20 °C:	3.45 g/cm ³
· Bulk density at 20 °C:	1850 kg/m ³
· Solubility in / Miscibility with water at 20 °C:	140 g/l
· Organic solvents:	0.0 %
· Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Explosive reaction with oxidising agents such as calcium chlorate and or peroxides.
Contact with acids releases toxic gases.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Hydrogen cyanide (prussic acid)

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Fatal if swallowed or if inhaled.

· **LD/LC50 values relevant for classification:**

ATE (Acute Toxicity Estimates)

Oral	LD50	29 mg/kg (rat)
Dermal	LD50	100 mg/kg (human)
Inhalative	LC50/4 h	0.05 mg/l

13967-50-5 potassium dicyanoaurate

Oral	LD50	29 mg/kg (rat)
Dermal	LD50	100 mg/kg (human) (CN)
Inhalative	LC50/4 h	0.05 mg/l (ATE)
	LC50	524 mg/kg (10min) (human) (HCN)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.

(Contd. on page 7)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

**Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au**

· **Aspiration hazard** Based on available data, the classification criteria are not met.

(Contd. of page 6)

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

13967-50-5 potassium dicyanoaurate

LC50	0.083 mg/l (96h) (Lepomis macrochirus (bluegrill)) (CN)
LC50	0.12 mg/l (96h) (Pimephales promelas (fathead minnow)) (CN)
	0.057 mg/l (96h) (Onchorhynchus mykiss (rainbow trout)) (CN)
EC50	0.041 mg/l (48h) (Daphnia magna (water flea)) (CN)
EC50	1.8 mg/l (72h) (Eutosiphon sulcatum) (CN)
IC50	0.03 mg/l (8d) (Sc.quadricauda) (CN)

· **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.

· **Ecotoxicological effects:**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

· **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**

Contact manufacturer for recycling information.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Must be specially treated adhering to official regulations.

· **European waste catalogue**

11 00 00	WASTES FROM CHEMICAL SURFACE TREATMENT AND COATING OF METALS AND OTHER MATERIALS; NON-FERROUS HYDRO-METALLURGY
11 01 00	wastes from chemical surface treatment and coating of metals and other materials (for example galvanic processes, zinc coating processes, pickling processes, etching, phosphating, alkaline degreasing, anodising)
11 01 98*	other wastes containing hazardous substances

· **Uncleaned packaging:**

· **Recommendation:**

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

(Contd. on page 8)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au

(Contd. of page 7)

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· **14.1 UN-Number**
· **ADR, IMDG, IATA**

UN1588

· **14.2 UN proper shipping name**
· **ADR**

1588 CYANIDES, INORGANIC, SOLID, N.O.S.
(potassium dicyanoaurate), ENVIRONMENTALLY
HAZARDOUS

· **IMDG**

CYANIDES, INORGANIC, SOLID, N.O.S. (potassium
dicyanoaurate), MARINE POLLUTANT

· **IATA**

Cyanides, inorganic, solid, n.o.s.

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**

6.1 (T5) Toxic substances.

· **Label**

6.1

· **IMDG**



· **Class**

6.1 Toxic substances.

· **Label**

6.1

· **IATA**



· **Class**

6.1 Toxic substances.

· **Label**

6.1

· **14.4 Packing group**

· **ADR, IMDG, IATA**

II

· **14.5 Environmental hazards:**

· **Marine pollutant:**

Yes

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **14.6 Special precautions for user**

Warning: Toxic substances.

· **Danger code (Kemler):**

60

· **EMS Number:**

F-A,S-A

· **Segregation groups**

Cyanides

· **Stowage Category**

A

· **Segregation Code**

SG35 Stow "separated from" acids.

(Contd. on page 9)

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au

(Contd. of page 8)

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1588 CYANIDES, INORGANIC, SOLID, N.O.S. (POTASSIUM DICYANOAUATE), 6.1, II, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category**
H2 ACUTE TOXIC
E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning juveniles must be observed.
- **Waterhazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Abteilung Umweltschutz
- **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)
ICAO: International Civil Aviation Organisation
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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances

(Contd. on page 10)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 24.08.2018

Version number 5

Revision: 24.08.2018

Trade name: Kaliumgold(I)cyanid 68,2% / 68,3%
Potassium dicyanoaurate 68,2% Au / 68,3 % Au

CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Met. Corr. 1: Corrosive to metals – Category 1
Acute Tox. 2: Acute toxicity – Category 2
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

*** Data compared to the previous version altered.**

(Contd. of page 9)

GB