

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

· **Trade name:** Kaliumsilbercyanid 54,2 % Ag
Potassium dicyanoargentate 54,2% Ag

· **Article number:** 4020110101

· **CAS Number:**
506-61-6

· **EC number:**
208-047-0

· **Index number:**
006-007-00-5

· **Registration number** 01-2120753799-33

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

Sector of Use

SU17 General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
SU16 Manufacture of computer, electronic and optical products, electrical equipment

Product category

PC14 Metal surface treatment products
PC15 Non-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
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
PROC5 Mixing or blending in batch processes
PROC7 Industrial spraying
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)
PROC10 Roller application or brushing
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

ERC1 Manufacture of the substance
ERC2 Formulation into mixture
ERC5 Use at industrial site leading to inclusion into/onto article
ERC8a Widespread use of non-reactive processing aid (no inclusion into or 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

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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. 1 H300 Fatal if swallowed.
Acute Tox. 1 H310 Fatal in contact with skin.
Acute Tox. 1 H330 Fatal if inhaled.



GHS05 corrosion

Met. Corr.1 H290 May be corrosive to metals.
Skin Corr. 1A H314 Causes severe skin burns and eye damage.
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.

- **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 dicyanoargentate
- **Hazard statements**
H290 May be corrosive to metals.
H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.
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.
P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.
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.

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· **vPvB:** Not applicable.

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SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**
506-61-6 potassium dicyanoargentate
- **Identification number(s)**
- **EC number:** 208-047-0
- **Index number:** 006-007-00-5

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing equipment only after contaminated clothing have been completely removed.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
Do not use mouth to mouth or mouth to nose resuscitation.
- **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. Then 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** 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.
- **5.2 Special hazards arising from the substance or mixture**
Hydrogen chloride (HCl)
Nitrogen oxides (NOx)
- **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**
Wear protective equipment. Keep unprotected persons away.
Mount respiratory protective device.
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or any water course.
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.

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- Ensure adequate ventilation.
- Pick up mechanically.
- **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**
- Thorough dedusting.
- Ensure good ventilation/exhaustion at the workplace.
- Open and handle receptacle with care.
- **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.
- **Storage class:** 6.1 B
- **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:** Not required.

· DNELs

506-61-6 potassium dicyanoargentate

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

506-61-6 potassium dicyanoargentate

PNEC (Industrie)	0.03 µg/l (H2O) (CN)
PNEC (Commercial)	0.03 µg/l (H2O) (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.
- **Respiratory protection:**
- Short term filter device:
- Filter P1

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· **Protection of hands:**



Protective gloves

· **Material of gloves**

Chloroprene rubber, CR
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR

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

· **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:	Characteristic

· **pH-value at 20 °C:** 9.5

· **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
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· **Density at 20 °C:** 2.364 g/cm³

· **Solubility in / Miscibility with**

water at 20 °C:	145 g/l
Organic solvents:	0.0 %

Solids content: 100.0 %

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· **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** 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, in contact with skin or if inhaled.

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

ATE (Acute Toxicity Estimates)

Oral	LD50	21 mg/kg (rat)
Dermal	LD50	100 mg/kg (human)
Inhalative	LC50/4 h	0.005 mg/l

506-61-6 potassium dicyanoargentate

Oral	LD50	21 mg/kg (rat)
Dermal	LD50	100 mg/kg (human)
Inhalative	LC50/4 h	0.005 mg/l (ATE)
	LC50	524 mg/kg (10min) (human) (HCN)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes severe skin burns and eye damage.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **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.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

506-61-6 potassium dicyanoargentate

LC50	0.0049 mg/l (96h) (Pimephales promelas (fathead minnow)) (Ag)
LC50	0.12 mg/l (96h) (Pimephales promelas (fathead minnow)) (CN)

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	0.083 mg/l (96h) (Lepomis macrochirus (bluegrill)) (CN)
	0.057 mg/l (96h) (Onchorhynchus mykiss (rainbow trout)) (CN)
EC50	0.0015 mg/l (48h) (Daphnia magna (water flea)) (Ag)
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) (Assessment by list): 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 be specially treated adhering to official regulations.
- **Uncleaned packaging:**
- **Recommendation:**
Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.
Packaging may be reused or recycled after cleaning.
- **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 dicyanoargentate), ENVIRONMENTALLY HAZARDOUS
· IMDG	CYANIDES, INORGANIC, SOLID, N.O.S. (potassium dicyanoargentate), MARINE POLLUTANT
· IATA	CYANIDES, INORGANIC, SOLID, N.O.S. (potassium dicyanoargentate)

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· 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): 66
· EMS Number: F-A,S-A
· Segregation groups Cyanides

· 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

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· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN1588, CYANIDES, INORGANIC, SOLID, N.O.S. (potassium dicyanoargentate), ENVIRONMENTALLY HAZARDOUS, 6.1, II

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**
H1 ACUTE TOXIC
E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 20 t
- **National regulations:**
- **Technical instructions (air):**

Class	Share in %
I	100.0

- **Waterhazard class:** Water danger class 3 (Assessment by list): 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.

- **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 Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (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 Harmonised 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)
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. 1: Acute toxicity – Category 1
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Eye Dam. 1: Serious eye damage/eye irritation – 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.**