

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 20.03.2018

Version number 2

Revision: 20.03.2018

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

1.1 Product identifier

Trade name: **Pantasolsalz zur Versilberung, Pantasolsalz zur Versilberung mit Alukontakten**
Pantasol silver bath (make-up salt), - with aluminium contact

Article number: 3090300303, 3120300103

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

No further relevant information available.

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. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.



GHS05 corrosion

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 product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05 GHS06 GHS09

Signal word Danger

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

potassium cyanide
potassium dicyanoargentate

· **Hazard statements**

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 151-50-8 EINECS: 205-792-3	potassium cyanide Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	50-100%
CAS: 506-61-6 EINECS: 208-047-0	potassium dicyanoargentate Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Met. Corr. 1, H290; Eye Dam. 1, H318; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	25-50%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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 or oxygen; call for doctor.

Do not use mouth to mouth or mouth to nose resuscitation.

Use a respiratory bag or breathing device.

· **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.

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- **4.2 Most important symptoms and effects, both acute and delayed**
 - Nausea
 - Unconsciousness
 - Breathing difficulty
- **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**
 - In case of fire, the following can be released:
 - Hydrogen cyanide (HCN)
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - 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:**
 - Pick up mechanically.
 - Dispose contaminated material as waste according to item 13.
 - 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.
 - 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.

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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:**

151-50-8 potassium cyanide

WEL	Long-term value: 5 mg/m ³ as CN; Sk
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· 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 (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.
Avoid contact with the eyes and skin.

· Respiratory protection:

Suitable respiratory protective device recommended.

Filter P2

Filter P1

· Protection of hands:

Plastic gloves



Protective gloves

· Material of gloves

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

· 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

· Eye protection:



Tightly sealed goggles

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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:** Crystalline
· **Colour:** Whitish
· **Odour:** Characteristic

· **pH-value (25 g/l) at 20 °C:** 11

· Change in condition

· **Melting point/freezing point:** Undetermined.
· **Initial boiling point and boiling range:** Undetermined.

· **Flash point:** Not applicable.

· **Auto-ignition temperature:** Product is not selfigniting.

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

· Explosion limits:

· **Oxidising properties** None

· **Density at 20 °C:** 880 kg/m³

· **Solubility in / Miscibility with water at 20 °C:** 120 g/l

· Solvent content:

· **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** 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	6.24 mg/kg (rat)
Dermal	LD50	6.64 mg/kg
Inhalative	LC50/4 h	0.05 mg/l

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151-50-8 potassium cyanide

Oral	LD50	5 mg/kg (rat)
	LDLO	2.86 mg/kg (human) (RTECS)
Dermal	LD50	5 mg/kg (ATE)
Inhalative	LC50/4 h	0.05 mg/l (ATE)

506-61-6 potassium dicyanoargentate

Oral	LD50	21 mg/kg (rat)
Dermal	LD50	100 mg/kg (human)
Inhalative	LC50/4 h	0.05 mg/l (ATE)
	LC50	524 mg/kg (10min) (human) (HCN)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **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:

151-50-8 potassium cyanide

LC50	0.45 mg/l (96h) (Lepomis macrochirus (bluegrill))
EC50	2 mg/l (48h) (Daphnia magna (water flea))
EC50	1.8-1.9 mg/l (72h) (Eutosiphon sulcatum) (CN)
IC50	0.03 mg/l (8d) (Sc.quadricauda)

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)
	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:** Toxic for fish

· Additional ecological information:

· General notes:

Toxic for aquatic organisms

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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**

Must be specially treated adhering to official regulations.

Contact manufacturer for recycling information.

· **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.

· **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 CYANIDE, potassium dicyanoargentate)

· **IMDG**

CYANIDES, INORGANIC, SOLID, N.O.S.
(POTASSIUM CYANIDE, potassium dicyanoargentate),
MARINE POLLUTANT

· **IATA**

CYANIDES, INORGANIC, SOLID,
N.O.S.(POTASSIUM CYANIDE, potassium
dicyanoargentate)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**

6.1 (T5) Toxic substances.

· **Label**

6.1

· **IMDG**



· **Class**

6.1 Toxic substances.

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· 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
· Excepted quantities (EQ)	Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
· IATA	
· Remarks:	(POTASSIUM CYANIDE, potassium dicyanoargentate)
· UN "Model Regulation":	UN1588, CYANIDES, INORGANIC, SOLID, N.O.S., 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 None of the ingredients is 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

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· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
I	26.0

· **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.

· **Relevant phrases**

H290 May be corrosive to metals.

H300 Fatal if swallowed.

H310 Fatal in contact with skin.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· **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

ELINCS: European List of Notified 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. 2: Acute toxicity – Category 2

Acute Tox. 1: Acute toxicity – Category 1

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.**