

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 30.08.2018

Version number 2

Revision: 08.08.2017

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

- **1.1 Product identifier**
- **Trade name:** Spezialleitsilberpulver, Arcuplat Leitsilberpulver  
Conductive silver powder, Arcuplat conductive silver powder
- **Article number:** 3060300202, 3170300202, 3170300302
- **CAS Number:**  
7440-22-4
- **EC number:**  
231-131-3
- **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** Coating material
- **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**



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**



GHS09

- **Signal word** Warning
- **Hazard statements**  
H410 Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**  
P273 Avoid release to the environment.  
P391 Collect spillage.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **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**  
7440-22-4 silver (powder)
- **Identification number(s)**
- **EC number:** 231-131-3

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Seek medical treatment.
- **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:**  
Sand  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **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.  
Keep away from ignition sources.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Ensure adequate ventilation.
- **6.4 Reference to other sections** See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**  
Prevent formation of dust.  
Ensure good ventilation/exhaustion at the workplace.  
Keep receptacles tightly sealed.

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- **Information about fire - and explosion protection:**  
 Keep ignition sources away - Do not smoke.  
 Dust can combine with air to form an explosive mixture.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Storage class:** LGK 11
- **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:**

**7440-22-4 silver**

WEL Long-term value: 0.1 mg/m<sup>3</sup>

· **PNECs**

**7440-22-4 silver**

PNEC <sub>freshwater</sub>	0.04 µg/l (-) (Soluble Ag)
PNEC <sub>marine</sub>	0.86 µg/l (-) (Soluble Ag)
PNEC <sub>sediment freshw.</sub>	438 mg/kg dwt (-) (Ag)
PNEC <sub>sediment marine</sub>	438 mg/kg dwt (-) (Ag)
PNEC <sub>soil</sub>	0.794 mg/kg ww (Ag)
PNEC <sub>STP</sub>	0.025 mg/l (-) (Soluble Ag)

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

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

· **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

Filter P2

· **Protection of hands:**



Protective gloves

· **Material of gloves** Plastic gloves

· **Penetration time of glove material**

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

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.

· **Eye protection:** 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:** Grey  
**Odour:** Odourless

#### · Change in condition

**Melting point/freezing point:** 961.3 °C  
**Initial boiling point and boiling range:** 2212 °C

· **Flash point:** Not applicable.

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

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

· **Density at 20 °C:** 10.5 g/cm<sup>3</sup>

#### · Solubility in / Miscibility with water:

**Organic solvents:** Insoluble.  
 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

Reacts with acids.

Reacts with alkali (lyes).

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## SECTION 11: Toxicological information

### · 11.1 Information on toxicological effects

· **Acute toxicity** Based on available data, the classification criteria are not met.

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

**7440-22-4 silver**

Oral LD50 >2,000 mg/kg (rat)

#### · Primary irritant effect:

· **Skin corrosion/irritation** Based on available data, the classification criteria are not met.

· **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

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- **Repeated dose toxicity**

- 7440-22-4 silver

Oral	Repeat dose tox.	30 mg/kg bw/d (rat) (with silver nanomaterial)
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- **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:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

- **12.3 Bioaccumulative potential**

- 7440-22-4 silver

Oral	BCF	70 (Cyprinus carpio) (Test material: silver cyanid)
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- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water  
 Do not allow product to reach ground water, water course or sewage system.  
 Danger to drinking water if even 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.
- **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

- |                                                                                                               |                                                                           |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | UN3077                                                                    |
| <ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR</b></li> </ul> | 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver (powder)) |

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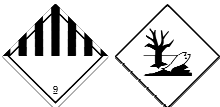
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· <b>IMDG</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver (powder)), MARINE POLLUTANT
· <b>IATA</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver (powder))
· <b>14.3 Transport hazard class(es)</b>	
· <b>ADR</b>	
	
· <b>Class</b>	9 (M7) Miscellaneous dangerous substances and articles.
· <b>Label</b>	9
· <b>IMDG, IATA</b>	
	
· <b>Class</b>	9 Miscellaneous dangerous substances and articles.
· <b>Label</b>	9
· <b>14.4 Packing group</b>	
· <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Environmental hazards:</b>	
· <b>Marine pollutant:</b>	No
· <b>Special marking (ADR):</b>	Symbol (fish and tree)
· <b>Special marking (IATA):</b>	Symbol (fish and tree)
· <b>14.6 Special precautions for user</b>	Warning: Miscellaneous dangerous substances and articles.
· <b>Danger code (Kemler):</b>	90
· <b>EMS Number:</b>	F-A,S-F
· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADR</b>	
· <b>Limited quantities (LQ)</b>	5 kg
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	E
· <b>UN "Model Regulation":</b>	UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver (powder)), 9, III

## 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 E1** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

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- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
- **Waterhazard class:** Water hazard class 2 (Assessment by list): 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)

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

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.**

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