

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

Printing date 19.03.2018

Version number 2

Revision: 19.03.2018

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

- **1.1 Product identifier**
- **Trade name:** Spezialleitsilberlack Nr.24, Arcuplat Leitsilberlack  
Conductive silver paint No. 24, Arcuplat conductive silver
- **Article number:** 3060300102, 3170300402
- **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**



GHS02 flame

Flam. Liq. 2      H225 Highly flammable liquid and vapour.



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

STOT SE 3      H336 May cause drowsiness or dizziness.

- **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**



GHS02



GHS07



GHS09

- **Signal word** Danger
- **Hazard-determining components of labelling:**  
1-ethoxypropan-2-ol  
acetone  
ethyl acetate

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### · Hazard statements

- H225 Highly flammable liquid and vapour.
- H336 May cause drowsiness or dizziness.
- H410 Very toxic to aquatic life with long lasting effects.

### · Precautionary statements

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- P273 Avoid release to the environment.
- P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

### · 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: 7440-22-4 EINECS: 231-131-3	silver (powder) ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	25-50%
CAS: 1569-02-4 EINECS: 216-374-5	1-ethoxypropan-2-ol ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	20-25%
CAS: 64-17-5 EINECS: 200-578-6	ethanol ⚠ Flam. Liq. 2, H225	10-<25%
CAS: 9004-70-0	Nitrocellulose	< 10%
CAS: 67-64-1 EINECS: 200-662-2	acetone ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	3-10%
CAS: 141-78-6 EINECS: 205-500-4	ethyl acetate ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	1-<3%

- **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:** Take affected persons out of danger area and lay down.

### · After inhalation:

- Take affected persons into fresh air and keep quiet.
- Seek medical treatment in case of complaints.

### · 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

- No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
Alcohol resistant foam  
CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** Can form explosive gas-air mixtures.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information**  
Cool endangered receptacles with water spray.  
Collect contaminated fire fighting water separately. It must not enter the sewage system.

### 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.  
Ensure adequate ventilation
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **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** Prevent formation of aerosols.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 3A (VCI Konzept)
- **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.

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### · 8.1 Control parameters

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

##### 64-17-5 ethanol

WEL Long-term value: 1920 mg/m<sup>3</sup>, 1000 ppm

##### 67-64-1 acetone

WEL Short-term value: 3620 mg/m<sup>3</sup>, 1500 ppm  
Long-term value: 1210 mg/m<sup>3</sup>, 500 ppm

##### 141-78-6 ethyl acetate

WEL Short-term value: 400 ppm  
Long-term value: 200 ppm

#### · PNECs

##### 7440-22-4 silver (powder)

PNECfreshwater	0.04 µg/l (-) (Soluble Ag)
PNECmarine	0.86 µg/l (-) (Soluble Ag)
PNECsediment freshw.	438 mg/kg dwt (-) (Ag)
PNECsediment marine	438 mg/kg dwt (-) (Ag)
PNECsoil	0.794 mg/kg wwt (-) (Ag)
PNECSTP	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:** Wash hands before breaks and at the end of work.

· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

#### · Protection of hands:



Protective gloves

#### · Material of gloves

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

#### · Penetration time of glove material

The exact break trough 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:



Tightly sealed goggles

· **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:** Suspension

· **Colour:** Grey

· **Odour:** Characteristic

· **Change in condition**

· **Melting point/freezing point:** Undetermined.

· **Initial boiling point and boiling range:** Undetermined.

· **Flash point:** 12 °C (DIN 51755 Part 1)

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

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

· **Lower:** Not determined.

· **Upper:** Not determined.

· **Density at 20 °C:** 1,45 g/cm<sup>3</sup>

· **Solubility in / Miscibility with water:** Soluble.

· **Viscosity:**

· **Kinematic at 23 °C:** 411 mm<sup>2</sup>/s

· **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** No dangerous reactions known.

· **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 (powder)

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

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**  
May cause drowsiness or dizziness.
- **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 (powder)**

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) (Self-assessment): 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**  
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** UN1263

· **14.2 UN proper shipping name**

· **ADR** 1263 PAINT (having a flash-point below 23°C and viscous according to 2.2.3.1.4) (vapour pressure at 50°C not more than 110 kPa), ENVIRONMENTALLY

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· · <b>IMDG</b> · <b>IATA</b>	HAZARDOUS PAINT, MARINE POLLUTANT (SILVER) PAINT
· <b>14.3 Transport hazard class(es)</b> · <b>ADR</b>	
 	
· <b>Class</b> · <b>Label</b>	3 (F1) Flammable liquids. 3
· <b>IMDG</b>	
 	
· <b>Class</b> · <b>Label</b>	3 Flammable liquids. 3
· <b>IATA</b>	
	
· <b>Class</b> · <b>Label</b>	3 Flammable liquids. 3
· <b>14.4 Packing group</b> · <b>ADR, IMDG, IATA</b>	III
· <b>14.5 Environmental hazards:</b> · <b>Marine pollutant:</b>	No Symbol (fish and tree)
· <b>Special marking (ADR):</b>	Symbol (fish and tree)
· <b>14.6 Special precautions for user</b> · <b>Danger code (Kemler):</b> · <b>EMS Number:</b>	Warning: Flammable liquids. 33 F-E, <u>S</u> -E
· <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> · <b>Transport category</b> · <b>Tunnel restriction code</b>	5L 3 D/E
· <b>UN "Model Regulation":</b>	UN1263, PAINT (having a flash-point below 23°C and viscous according to 2.2.3.1.4) (vapour pressure at 50°C not more than 110 kPa), ENVIRONMENTALLY HAZARDOUS, 3, III

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### 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**  
E1 Hazardous to the Aquatic Environment  
P5c FLAMMABLE LIQUIDS
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

· **National regulations:**

· **Technical instructions (air):**

Class	Share in %
NK	51.0

- **Waterhazard class:** Water hazard class 2 (Self-assessment): 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**

- H225 Highly flammable liquid and vapour.
- H226 Flammable liquid and vapour.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
- 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)
- 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
- Flam. Liq. 2: Flammable liquids – Category 2
- Flam. Liq. 3: Flammable liquids – Category 3
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- 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.**