

# Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31 and 2020/878/  
EU

Printing date 02.07.2024

Version number 11 (replaces version 10)

Revision: 28.06.2024

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

**1.1 Product identifier****Trade name:** Weichlotlegierung bleifrei, SnAg, SnCu, SnAgCu**Soft solder lead-free****Sn 89,5 - 99,5%, Ag 0 - 10,5%, Cu 0 - 8,5%****Sn99Cu0,7Ag0,3; Sn98,4Ag0,8Cu0,8;****Sn95,5Ag3,8Cu0,7 (DIN EN ISO 9453: Sn95,5Ag3,8Cu0,7)****Sn96,5Ag3,0Cu0,5 (DIN EN ISO 9453: Sn96,5Ag3Cu0,5)****Sn97Ag3 (DIN EN ISO 9453: Sn97Ag3), Sn96,5Ag3,5, Sn96,2Ag3,8, Cu-Rotin 4 (Sn97Ag3)****Sn96,5Ag3,5; Sn96,2Ag3,8; Sn96Ag4 (DIN EN ISO 9453: Sn96Ag4)****Sn95Ag5 (DIN EN ISO 9453: Sn95Ag5), Sn97Cu3 (DIN EN ISO 9453: Sn97Cu3)****Sn99,3Cu0,7; Cu-Rotin 3 (Sn97Cu3); Sonderweichlot Sn98Ag2****Sn95Cu4,5Ag0,5, Sn90Ag10, Sn87Ag10Cu3, Sn95Cu5, Sn92Cu8**

UFI: not necessary.

**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** *Brazing alloy***1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Felder GmbH

Im Lipperfeld 11

D-46047 Oberhausen

Tel.: +49 (0)208/ 85035-0

Fax.: +49 (0)208/ 26080

<http://www.felder.de>e-mail: [info@felder.de](mailto:info@felder.de)**Further information obtainable from:**

lab

(mo-thu. 8:00 a.m. - 4:00 p.m./ fr. 8:00 a.m. - 1:00 p.m.)

email: [mprobst@felder.de](mailto:mprobst@felder.de)**1.4 Emergency telephone number:** Not required as this product is not subject to labelling.**EuPCS:** PC-TEC-24

## SECTION 2: Hazards identification

**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008***The product is not classified, according to the CLP regulation.***2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008** *Void***Hazard pictograms** *Void***Signal word** *Void***Hazard statements** *Void***Additional information:***Safety data sheet available on request.***2.3 Other hazards****Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.*

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures****Description:** *Mixture: consisting of the following components.***Dangerous components:**

|                                                                  |     |                                                     |         |
|------------------------------------------------------------------|-----|-----------------------------------------------------|---------|
| CAS: 7440-31-5<br>EINECS: 231-141-8<br>Reg.nr.: 01-2119486474-28 | tin | substance with a Community workplace exposure limit | 50-100% |
|------------------------------------------------------------------|-----|-----------------------------------------------------|---------|

(Contd. on page 2)

— EU —

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Sn97Ag3 (DIN EN ISO 9453: Sn97Ag3), Sn96,5Ag3,5, Sn96,2Ag3,8, Cu-Rotin 4 (Sn97Ag3)

Sn96,5Ag3,5; Sn96,2Ag3,8; Sn96Ag4 (DIN EN ISO 9453: Sn96Ag4)

Sn95Ag5 (DIN EN ISO 9453: Sn95Ag5), Sn97Cu3 (DIN EN ISO 9453: Sn97Cu3)

Sn99,3Cu0,7; Cu-Rotin 3 (Sn97Cu3); Sonderweichlot Sn98Ag2

Sn95Cu4,5Ag0,5, Sn90Ag10, Sn87Ag10Cu3, Sn95Cu5, Sn92Cu8

(Contd. of page 1)

|                                                                                                |        |                                                                                                           |          |
|------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------|----------|
| CAS: 7440-22-4<br>EINECS: 231-131-3<br>Reg.nr.: 01-2119555669-21                               | silver | substance with a Community workplace exposure limit                                                       | 0-<10.5% |
| CAS: 7440-50-8<br>EINECS: 231-159-6<br>Index number: 029-024-00-X<br>Reg.nr.: 01-2119480154-42 | copper |  Aquatic Chronic 2, H411 | 0-<8.5%  |

**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 into the fresh air.**After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:**

Do not pull solidified product off the skin.

After contact with the molten product, cool rapidly with cold water.

Seek medical treatment.

**After eye contact:** Rinse opened eye for several minutes under running water.**After swallowing:**

Rinse out mouth and then drink plenty of water.

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:**CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**5.2 Special hazards arising from the substance or mixture** No further relevant information available.**5.3 Advice for firefighters****Protective equipment:** Do not inhale explosion gases or combustion gases.

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.**6.2 Environmental precautions:** No special measures required.**6.3 Methods and material for containment and cleaning up:** Allow to solidify. 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**

Ensure that suitable extractors are available on processing machines

Extractors are required on all machines used for thermal processing or splinter removal processes.

No special measures required.

(Contd. on page 3)

— EU —

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(Contd. of page 2)

**Information about fire - and explosion protection:** *No special measures required.***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:** *Store away from foodstuffs.***Further information about storage conditions:** *Store in dry conditions.***Storage class:** 11**7.3 Specific end use(s)** *No further relevant information available.*

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:****7440-31-5 tin**

MAK (Germany)

vgl. Abschn. IIb

OEL (Ireland)

Short-term value: 0.2\*\* mg/m<sup>3</sup>Long-term value: 2\* 0.1\*\* mg/m<sup>3</sup>

IOELV, \*metal, oxide, inorg. compds., \*\*org. compds.

**7440-22-4 silver**

IOELV (EU)

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

AGW (Germany)

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

8(II); DFG, EU

WEL (Great Britain)

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

OEL (Ireland)

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

IOELV

**7440-50-8 copper**

MAK (Germany)

Long-term value: 0.01 A mg/m<sup>3</sup>

als Cu

WEL (Great Britain)

Short-term value: 2\*\* mg/m<sup>3</sup>Long-term value: 0.2\* 1\*\* mg/m<sup>3</sup>

\*fume \*\*dusts and mists (as Cu)

OEL (Ireland)

Long-term value: 0.2\* 1\*\* mg/m<sup>3</sup>

\*fume \*\*dusts and mists

**Regulatory information**

MAK (Germany): MAK- und BAT-Liste

OEL (Ireland): 2021 CoP for the Safety, Health and Welfare at Work

IOELV (EU): (EU) 2019/1831

AGW (Germany): TRGS 900

WEL (Great Britain): EH40/2020

**recommended monitoring procedures in accordance with 2020/878/EU no. 8.1.2:**

7440-50-8 copper: BIA 7755 (D), NIOSH 7301(E), MétroPol Fiche 003(F), MTA/MA-025/A92(ESP)

7440-22-4 silver: ISO 15202(F, E), BIA 8600(D), NIOSH 7301(E)

7440-31-5 tin: NIOSH 7300, 7301, 7303(E), OSHA ID-121, ISO15202(E,F), MTA/MA-025/A92(ESP)

**Additional information:** *The lists valid during the making were used as basis.***8.2 Exposure controls****Appropriate engineering controls***Ensure adequate ventilation.**Remove the fumes by means of suitable suction devices.*

(Contd. on page 4)

— EU —

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(Contd. of page 3)

**Individual protection measures, such as personal protective equipment****General protective and hygienic measures:** *Do not eat, drink, smoke or sniff while working.***Respiratory protection:***Use suitable respiratory protective device in case of insufficient ventilation.**Filter P2***Hand protection****Material of gloves** *Leather gloves.***Penetration time of glove material** *Value for the permeation: Level ≤ -***Eye/face protection** *in cases of application: protective goggles***Body protection:** *Protective work clothing*

## SECTION 9: Physical and chemical properties

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

|                                                                 |                                 |
|-----------------------------------------------------------------|---------------------------------|
| <b>Colour:</b>                                                  | <i>Silver-coloured</i>          |
| <b>Odour:</b>                                                   | <i>Odourless</i>                |
| <b>Odour threshold:</b>                                         | <i>Not determined.</i>          |
| <b>Melting point/freezing point:</b>                            | <i>217-250 °C</i>               |
| <b>Boiling point or initial boiling point and boiling range</b> | <i>Undetermined.</i>            |
| <b>Flammability</b>                                             | <i>Not determined.</i>          |
| <b>Lower and upper explosion limit</b>                          |                                 |
| <b>Lower:</b>                                                   | <i>Not determined.</i>          |
| <b>Upper:</b>                                                   | <i>Not determined.</i>          |
| <b>Flash point:</b>                                             | <i>Not applicable.</i>          |
| <b>Decomposition temperature:</b>                               | <i>Not determined.</i>          |
| <b>pH</b>                                                       | <i>Not applicable.</i>          |
| <b>Viscosity:</b>                                               |                                 |
| <b>Kinematic viscosity</b>                                      | <i>Not applicable.</i>          |
| <b>Dynamic:</b>                                                 | <i>Not applicable.</i>          |
| <b>Solubility</b>                                               |                                 |
| <b>water:</b>                                                   | <i>Insoluble.</i>               |
| <b>Partition coefficient n-octanol/water (log value)</b>        | <i>Not determined.</i>          |
| <b>Vapour pressure:</b>                                         | <i>Not applicable.</i>          |
| <b>Density and/or relative density</b>                          |                                 |
| <b>Density at 20 °C:</b>                                        | <i>7.3-7.6 g/cm<sup>3</sup></i> |
| <b>Relative density</b>                                         | <i>Not determined.</i>          |
| <b>Vapour density</b>                                           | <i>Not applicable.</i>          |
| <b>Particle characteristics</b>                                 |                                 |
| <i>See section 3.</i>                                           |                                 |

**9.2 Other information****Appearance:****Form:** *Solid***Important information on protection of health and environment, and on safety.****Ignition temperature:** *Product is not selfigniting.***Explosive properties:** *Product does not present an explosion hazard.***Solvent content:****Organic solvents:** *0.0 %***VOC (EC)** *0.00 %***Solids content:** *100.0 %*

(Contd. on page 5)

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Sn97Ag3 (DIN EN ISO 9453: Sn97Ag3), Sn96,5Ag3,5, Sn96,2Ag3,8, Cu-Rotin 4 (Sn97Ag3)

Sn96,5Ag3,5; Sn96,2Ag3,8; Sn96Ag4 (DIN EN ISO 9453: Sn96Ag4)

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(Contd. of page 4)

**Change in condition****Evaporation rate**

Not applicable.

**Information with regard to physical hazard classes****Explosives**

Void

**Flammable gases**

Void

**Aerosols**

Void

**Oxidising gases**

Void

**Gases under pressure**

Void

**Flammable liquids**

Void

**Flammable solids**

Void

**Self-reactive substances and mixtures**

Void

**Pyrophoric liquids**

Void

**Pyrophoric solids**

Void

**Self-heating substances and mixtures**

Void

**Substances and mixtures, which emit flammable gases in contact with water**

Void

**Oxidising liquids**

Void

**Oxidising solids**

Void

**Organic peroxides**

Void

**Corrosive to metals**

Void

**Desensitised explosives**

Void

## 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 and stored according to specifications.

Stable up to melting point.

**10.3 Possibility of hazardous reactions** Reacts with acids, alkalis and oxidising agents.**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 hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity** Based on available data, the classification criteria are not met.**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.**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.

(Contd. on page 6)

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Sn96,5Ag3,0Cu0,5 (DIN EN ISO 9453: Sn96,5Ag3Cu0,5)

Sn97Ag3 (DIN EN ISO 9453: Sn97Ag3), Sn96,5Ag3,5, Sn96,2Ag3,8, Cu-Rotin 4 (Sn97Ag3)

Sn96,5Ag3,5; Sn96,2Ag3,8; Sn96Ag4 (DIN EN ISO 9453: Sn96Ag4)

Sn95Ag5 (DIN EN ISO 9543: Sn95Ag5), Sn97Cu3 (DIN EN ISO 9543: Sn97Cu3)

Sn99,3Cu0,7; Cu-Rotin 3 (Sn97Cu3); Sonderweichlot Sn98Ag2

Sn95Cu4,5Ag0,5, Sn90Ag10, Sn87Ag10Cu3, Sn95Cu5, Sn92Cu8

(Contd. of page 5)

**11.2 Information on other hazards****Endocrine disrupting properties***None of the ingredients is listed.***SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:** *No further relevant information available.***chronic aquatic toxicity:** *Classification criteria Copper (029-024-00-X) Environmental hazard not fulfilled.***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.***12.5 Results of PBT and vPvB assessment****PBT:** *Not applicable.***vPvB:** *Not applicable.***12.6 Endocrine disrupting properties***The product does not contain substances with endocrine disrupting properties.***12.7 Other adverse effects****Additional ecological information:****General notes:** *Not hazardous for water.***SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation** *Contact manufacturer for recycling information.***European waste catalogue***17 04 07: mixed metals**spool:**15 01 02: plastic packaging**overpack:**15 01 01: paper and cardboard packaging***Uncleaned packaging:** *void.***Recommendation:** *Disposal must be made according to official regulations.***SECTION 14: Transport information****14.1 UN number or ID number**

ADR, ADN, IMDG, IATA

Void

**14.2 UN proper shipping name**

ADR, ADN, IMDG, IATA

Void

**14.3 Transport hazard class(es)**

ADR, ADN, IMDG, IATA

Class

Void

**14.4 Packing group**

ADR, IMDG, IATA

Void

**14.5 Environmental hazards:****Marine pollutant:**

No

**14.6 Special precautions for user***Not applicable.***14.7 Maritime transport in bulk according to IMO instruments***Not applicable.*

(Contd. on page 7)

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Sn97Ag3 (DIN EN ISO 9453: Sn97Ag3), Sn96,5Ag3,5, Sn96,2Ag3,8, Cu-Rotin 4 (Sn97Ag3)

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Sn95Ag5 (DIN EN ISO 9453: Sn95Ag5), Sn97Cu3 (DIN EN ISO 9453: Sn97Cu3)

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Sn95Cu4,5Ag0,5, Sn90Ag10, Sn87Ag10Cu3, Sn95Cu5, Sn92Cu8

UN "Model Regulation":

Void

(Contd. of page 6)

## 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.*REGULATION (EU) 2019/1021 on persistent organic pollutants (POP) *None of the ingredients are included.***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II***None of the ingredients is listed.***REGULATION (EU) 2019/1148****Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))***None of the ingredients is listed.***Annex II - REPORTABLE EXPLOSIVES PRECURSORS***None of the ingredients is listed.***Regulation (EC) No 273/2004 on drug precursors***None of the ingredients is listed.***Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors***None of the ingredients is listed.***National regulations:****Information about limitation of use:** *Employment restrictions concerning juveniles must be observed.***Waterhazard class:** *Generally not 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.***Reasons for changes:**

24.08.2015: adaption to Regulation 453/2010/EC, 830/2015/EU, 2012/18/EU

23.01.2017: chapter 1 new alloy added

15.01.2018: chapter 13

15.02.2018: chapter 1 new alloy added

12.12.2019: chapter 1

24.11.2020: adaption to Regulation. 2020/878/EU, 15. ATP

14.05.2021: chapter 15, 16

16.05.2022: chapter 8, 15

21.06.2022: chapter 1

28.06.2024: chapter 12

**Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:****Relevant phrases***H411 Toxic to aquatic life with long lasting effects.***Contact:** Dr. M. Probst**Version number of previous version:** 10

(Contd. on page 8)

— EU —

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(Contd. of page 7)

**Abbreviations and acronyms:***ADR: Accord relatif au transport international 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)**VOC: Volatile Organic Compounds (USA, EU)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2***Safety data sheet SD3119**

— EU —