

Safety data sheet

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

Printing date 29.07.2025

Version number 8 (replaces version 7)

Revision: 06.05.2025

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

1.1 Product identifier**Trade name: Ag 156, B-Ag56CuZnSn-620/655, (L-Ag55Sn, AG 102)**

UFI: not applicable.

**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 *Hard solder***1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

FELDER GMBH
Im Lipperfeld 11
D-46047 Oberhausen

Tel.: 0208/8 50 35-0

Fax.: 0208/2 60 80

<http://www.felder.de>e-mail: 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**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 elementsLabelling according to Regulation (EC) No 1272/2008 *Void*Hazard pictograms *Void*Signal word *Void*Hazard statements *Void***Additional information:**

EUH210 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 MixturesDescription: *Mixture: consisting of the following components.***Dangerous components:**

CAS: 7440-22-4 EINECS: 231-131-3 Reg.nr.: 01-2119555669-21	silver substance with a Community workplace exposure limit	55.0-57.0%
CAS: 7440-50-8 EINECS: 231-159-6 Index number: 029-024-00-X Reg.nr.: 01-2119480154-42	copper ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	21.0-23.0%
CAS: 7440-66-6 EINECS: 231-175-3 Index number: 030-001-01-9 Reg.nr.: 01-2119467174-37	zinc substance with a Community workplace exposure limit	15.0-19.0%
CAS: 7440-31-5 EINECS: 231-141-8 Reg.nr.: 01-2119486474-28	tin substance with a Community workplace exposure limit	1.5-2.5%

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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:

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

Do not pull solidified product off the skin.

Seek medical treatment.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing: If symptoms persist consult doctor.

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:

CO₂, 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: Do not allow to enter sewers/ surface or ground water.

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

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

Ensure that suitable extractors are available on processing machines

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: 13

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:

7440-22-4 silver

IOELV (EU)	Long-term value: 0.1 mg/m ³
WES (Australia)	Long-term value: 0.1 mg/m ³
AGW (Germany)	Long-term value: 0.1 E mg/m ³ 8(II);DFG, EU

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WEL (Great Britain)	Long-term value: 0.1 mg/m ³
OEL (Ireland)	Long-term value: 0.1 mg/m ³ IOELV
7440-50-8 copper	
WES (Australia)	Long-term value: 1* 0.2** mg/m ³ *dust & mists (as Cu) **fume
AGW (Germany)	Long-term value: 0.045 (A) 0.200 (E) mg/m ³ 8 (II) (A) 4 (II) (E);AGS, 10, als Cu
WEL (Great Britain)	Short-term value: 2** mg/m ³ Long-term value: 0.2* 1** mg/m ³ *fume **dusts and mists (as Cu)
OEL (Ireland)	Long-term value: 0.2* 1** mg/m ³ *fume **dusts and mists
7440-66-6 zinc	
MAK (Germany)	Long-term value: 0.1A* 2E** mg/m ³ *alveolengängig; **einatembare
7440-31-5 tin	
WES (Australia)	Long-term value: 2 mg/m ³
MAK (Germany)	vgl. Abschn. IIb
OEL (Ireland)	Short-term value: 0.2** mg/m ³ Long-term value: 2* 0.1** mg/m ³ IOELV, *metal, oxide, inorg. compds., **org. compds.

Regulatory information

IOELV (EU): (EU) 2019/1831

WES (Australia): Workplace exposure standards for airborne contaminants

AGW (Germany): TRGS 900

WEL (Great Britain): EH40/2020

OEL (Ireland): 2024 CoP for the Safety, Health and Welfare at Work

MAK (Germany): MAK- und BAT-Liste

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

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

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

7440-66-6 zinc: OSHA ID121(E), NIOSH 7300, 7301, 7303(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.

Individual protection measures, such as personal protective equipment**General protective and hygienic measures:**

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

Respiratory protection:

Use suitable respiratory protective device in case of insufficient ventilation.

Filter P2

Hand protection Leather gloves**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****Colour:**

Silver-coloured

Odour:

Odourless

Odour threshold:

Not determined.

Melting point/freezing point:

620-655 °C

Boiling point or initial boiling point and boiling range Undetermined.

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Flammability	<i>Not determined.</i>
Lower and upper explosion limit	
Lower:	<i>Not determined.</i>
Upper:	<i>Not determined.</i>
Flash point:	<i>Not applicable.</i>
Decomposition temperature:	<i>Not determined.</i>
pH	<i>Not applicable.</i>
Viscosity:	
Kinematic viscosity	<i>Not applicable.</i>
Dynamic:	<i>Not applicable.</i>
Solubility	
water:	<i>Insoluble.</i>
Partition coefficient n-octanol/water (log value)	<i>Not determined.</i>
Vapour pressure:	<i>Not applicable.</i>
Density and/or relative density	
Density at 20 °C:	<i>9.4 g/cm³</i>
Relative density	<i>Not determined.</i>
Vapour density	<i>Not applicable.</i>
Particle characteristics	<i>See section 3.</i>

9.2 Other information

Appearance:	
Form:	<i>Solid</i>
Important information on protection of health and environment, and on safety.	
Ignition temperature:	<i>Product is not selfigniting.</i>
Explosive properties:	<i>Product does not present an explosion hazard.</i>
Solvent content:	
Organic solvents:	<i>0.0 %</i>
VOC (EC)	<i>0.00 %</i>
Solids content:	<i>100.0 %</i>
Change in condition	
Evaporation rate	<i>Not applicable.</i>

Information with regard to physical hazard classes

Explosives	<i>Void</i>
Flammable gases	<i>Void</i>
Aerosols	<i>Void</i>
Oxidising gases	<i>Void</i>
Gases under pressure	<i>Void</i>
Flammable liquids	<i>Void</i>
Flammable solids	<i>Void</i>
Self-reactive substances and mixtures	<i>Void</i>
Pyrophoric liquids	<i>Void</i>
Pyrophoric solids	<i>Void</i>
Self-heating substances and mixtures	<i>Void</i>
Substances and mixtures, which emit flammable gases in contact with water	<i>Void</i>
Oxidising liquids	<i>Void</i>
Oxidising solids	<i>Void</i>
Organic peroxides	<i>Void</i>
Corrosive to metals	<i>Void</i>
Desensitised explosives	<i>Void</i>

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 strong oxidising agents.*

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*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.***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.***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.***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 conditions Copper (029-024-00-X) Environmental hazard not fulfilled.**Classification conditions Copper (029-026-00-0) specific surface area < 0,67 mm²/mg.***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** *For information on endocrine disrupting properties see section 11.***12.7 Other adverse effects****Additional ecological information:****General notes:***The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary**Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water**Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Recommendation** *Contact manufacturer for recycling information.***European waste catalogue***17 04 07: mixed metals**cardboard packaging:**15 01 01: paper and cardboard packaging**Plastic packaging, inner foil:**15 01 02: plastic packaging***Uncleaned packaging:** *void.***Recommendation:** *Disposal must be made according to official regulations.*

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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	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.
UN "Model Regulation":	Void

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

<i>None of the ingredients is listed.</i>

REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

<i>None of the ingredients is listed.</i>

Annex II - REPORTABLE EXPLOSIVES PRECURSORS
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<i>None of the ingredients is listed.</i>

Regulation (EC) No 273/2004 on drug precursors

<i>None of the ingredients is listed.</i>

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

<i>None of the ingredients is listed.</i>

National regulations:

Information about limitation of use: *Employment restrictions concerning juveniles must be observed.*Waterhazard class: *Water hazard class 1 (Self-assessment): slightly 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:

25.08.2015: *adaption to Regulation 453/2010/EG, 830/2015, 2012/18/EU*10.05.2017: *chapter 8*07.11.2018: *chapter 3, 13*21.04.2021: *chapter 1, 3, 8, 15, 16*17.03.2023: *chapter 11, 14, 15*06.05.2025: *chapter 1, 2, 8, 12, 15, 16*

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Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:**Relevant phrases***H400 Very toxic to aquatic life.**H410 Very toxic to aquatic life with long lasting effects.***Contact:** Dr. M. Probst**Version number of previous version:** 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 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***Safety data sheet SD3098**

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