

Safety data sheet

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

Printing date 04.06.2025

Version number 7 (replaces version 6)

Revision: 13.05.2025

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

1.1 Product identifierTrade name: **Special brass hard solder****Cu681, B-Cu59ZnSn(Fe)(Mn)(Si)-866/888**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.: +49 (0)208/ 85035-0**Fax.: +49 (0)208/ 26080**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:***24-hour emergency information:**Giftnotruf Berlin, counselling in German and English**Phone: (030) 30686 700***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:***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 Mixtures**Description:** *Mixture: consisting of the following components.*

| Dangerous components: | | |
|--|---|------------|
| CAS: 7440-50-8 EINECS: 231-159-6 Index number: 029-024-00-X Reg.nr.: 01-2119480154-42 | <i>copper</i> <i>Aquatic Acute 1, H400; Aquatic Chronic 1, H410</i> | 56.0-60.0% |
| CAS: 7440-66-6 EINECS: 231-175-3 Index number: 030-001-01-9 Reg.nr.: 01-2119467174-37 | <i>zinc</i> <i>substance with a Community workplace exposure limit</i> | 38.2-<40% |

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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: No special measures required.

After inhalation: Supply fresh air; consult doctor in case of complaints.

After skin contact:

Generally the product does not irritate the skin.

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

Do not pull solidified product off the skin.

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 Not required.

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.

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 No special measures required.

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:

7440-50-8 copper

| | |
|-----------------|---|
| WES (Australia) | Long-term value: 1* 0.2** mg/m ³ *dust & mists (as Cu) **fume |
|-----------------|---|

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| | |
|-----------------------|--|
| 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

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:

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

7440-66-6 zinc: NIOSH 7300, 7301, 7303(E), OSHA ID 121(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** No further data; see section 7.**Appropriate engineering controls:**

Ensure adequate ventilation.

Remove the fumes by means of suitable suction devices.

Ensure adequate ventilation.

Removing the fumes by 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

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Leather gloves

Material of gloves

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 cannot be calculated in advance and has therefore to be checked prior to the application.

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 16523-1:2015 are not performed under practical conditions.

Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

Eye/face protection Safety glasses**Body protection:** Protective work clothing**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Colour:**

Brass colours

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| | |
|--|--|
| Odour: | <i>Odourless</i> |
| Odour threshold: | <i>Not determined.</i> |
| Melting point/freezing point: | <i>870-890 °C</i> |
| Boiling point or initial boiling point and boiling range | <i>Undetermined.</i> |
| 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>8.4 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.*

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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 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:***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**Packaged for sale:**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.*

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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 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. |
| 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

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: *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:

08.04.2016: Adaptation to Regulations 453/2010/EC, 830/2015/EU, 2012/18/EU

11.04.2016: section 8

23.08.2018: section 8, 13

21.04.2021: section 1, 3, 15, 16

16.01.2025: section 12, 15

13.05.2025: section 1, 2, 3, 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: 6****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 SD3153**

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