

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

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

1.1 Product identifier

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

UFI: 9MQ8-H0DV-300C-U116

**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
Soldering flux

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



GHS08 health hazard

Repr. 2 H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

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

GHS07 GHS08

Signal word *Warning*

Hazard-determining components of labelling:

potassium pentaborate - hydrat

Hazard statements

H319 Causes serious eye irritation.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements

P264 Wash thoroughly after handling.

(Contd. on page 2)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 1)

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P280 Wear eye protection / face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Contains nickel (massive). May produce an allergic reaction.

Labelling of packages where the contents do not exceed 125 ml**Hazard pictograms**

GHS07 GHS08

Signal word Warning**Hazard-determining components of labelling:**

potassium pentaborate - hydrat

Hazard statements

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P405 Store locked up.

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.**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	copper Aquatic Chronic 2, H411	<50%
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	<50%
CAS: 12229-13-9 EINECS: 234-371-7 Reg.nr.: 01-2119970729-20	potassium pentaborate - hydrat Repr. 2, H361fd Specific concentration limit: Repr. 2; H361fd: C ≥ 5.2 %	<10%
CAS: 144-62-7 EINECS: 205-634-3 Index number: 607-006-00-8 Reg.nr.: 01-2119534576-33	oxalic acid Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312	<2.5%
CAS: 7439-96-5 EINECS: 231-105-1	manganese	<1%

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.

(Contd. on page 3)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 2)

*No special measures required.***After inhalation:** *Supply fresh air; consult doctor in case of complaints.***After skin contact:***If skin irritation continues, consult a doctor.**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:***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:***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***Under certain fire conditions, traces of other toxic gases cannot be excluded.***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*Use respiratory protective device against the effects of fumes/dust/aerosol.**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:** *Pick up mechanically.***6.4 Reference to other sections***No dangerous substances are released.**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.**Any unavoidable deposit of dust must be regularly removed.**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.**Protect from humidity and water.***Storage class:** 13**7.3 Specific end use(s)** *No further relevant information available.*

(Contd. on page 4)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 3)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

7440-50-8 copper

MAK (Germany)	Long-term value: 0.01 A mg/m ³ 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; **einatembar
---------------	--

144-62-7 oxalic acid

IOELV (EU)	Long-term value: 1 mg/m ³
AGW (Germany)	Long-term value: 1 E mg/m ³ 1(l);H, EU, 13
WEL (Great Britain)	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³
OEL (Ireland)	Long-term value: 1 mg/m ³ IOELV

Regulatory information

MAK (Germany): MAK- und BAT-Liste

WEL (Great Britain): EH40/2020

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

IOELV (EU): (EU) 2019/1831

AGW (Germany): TRGS 900

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)

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.

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

Pregnant women should strictly avoid inhalation or skin contact.

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 Leather gloves**Penetration time of glove material** Value for the permeation: Level ≤ -**Eyeface 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:

Copper coloured

Odour:

Odourless

Odour threshold:

Not determined.

(Contd. on page 5)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 4)

Melting point/freezing point:	Not applicable
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	Not determined.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Decomposition temperature:	Not determined.
pH	Not applicable.
Viscosity:	
Kinematic viscosity	Not applicable.
Dynamic:	Not applicable.
Solubility	
water:	Insoluble.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not applicable.
Density and/or relative density	
Density at 20 °C:	7.46 g/cm ³
Relative density	Not determined.
Vapour density	Not applicable.
Particle characteristics	
See section 3.	

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 %
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 according to specifications.

(Contd. on page 6)

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 5)

10.3 Possibility of hazardous reactions*Reacts with strong acids and oxidising agents.**Reacts with strong alkali.**Toxic fumes may be released if heated above the decomposition point.***10.4 Conditions to avoid** *No further relevant information available.***10.5 Incompatible materials:** *No further relevant information available.***10.6 Hazardous decomposition products:** *Irritant gases/vapours*

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.***LD/LC50 values relevant for classification:****ATE (Acute Toxicity Estimates)**

Oral	LD50	25,168 mg/kg (rat)
Dermal	LD50	73,826 mg/kg

Skin corrosion/irritation *Based on available data, the classification criteria are not met.***Serious eye damage/irritation***Causes serious eye irritation.***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***Suspected of damaging fertility. Suspected of damaging the unborn child.***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.***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:***Avoid transfer into the environment.**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 09*: metal waste contaminated with hazardous substances**HP10: Toxic for reproduction**HP14: Ecotoxic*

(Contd. on page 7)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 6)

*sales packaging (plastic cover):**15 01 02: plastic packaging***Uncleaned packaging:****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.

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.***REGULATION (EC) No 1907/2006 ANNEX XVII** *Conditions of restriction: 27***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 pregnant and lactating women must be observed.**Employment restrictions concerning women of child-bearing age must be observed.**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.*

(Contd. on page 8)

— EU —

Safety data sheet

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

Printing date 27.05.2024

Version number 4

Revision: 20.06.2023

Trade name: Sondermessinghartlot, ummantelt
Brass hard solder, flux-coated
Cu 681, B-Cu59Zn(Mn)(Si) (L-CuZn39)

(Contd. of page 7)

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:

11.04.2016: Adaption to 453/2010/EG, 830/2015/EU, 2012/18/EU
 section 8 Nickel

20.09.2022: section 1, 3, 11, 15, 16

20.06.2023: section 11

Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:

Relevant phrases

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H318 Causes serious eye damage.

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

H411 Toxic to aquatic life with long lasting effects.

Contact: Dr. M. Probst

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)

ICAO: International Civil Aviation Organisation

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Acute Tox. 4: Acute toxicity – Category 4

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 2: Reproductive toxicity – Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Safety data sheet SD3152

— EU —