Safety data sheet
according to 1907/2006/EC, Article 31 and 2020/878/EU

Printing date 27.03.2023 *Version number 8 (replaces version 7)* *Revision: 27.03.2023*

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

1.1 Product identifier
Trade name: Neusilberhartlot, ummantelt
Copper nickel brass hard solder, flux-coated
Cu 773, B-Cu48ZnNi(Si), (L-CuNi10Zn42)
UFI: *M4C8-P0WP-2001-68XJ*

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 hr. emergency information:
Poison emergency call Berlin

"Giftnotruf Berlin"
Tel.: 0049-30-30686 790
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

Carc. 2	*H351*	*Suspected of causing cancer.*
Repr. 2	*H361fd*	*Suspected of damaging fertility. Suspected of damaging the unborn child.*
STOT RE 2	*H373*	*May cause damage to organs through prolonged or repeated exposure.*


GHS07

Eye Irrit. 2	*H319*	*Causes serious eye irritation.*
Skin Sens. 1	*H317*	*May cause an allergic skin reaction.*

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
nickel (massive)

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Hazard statements
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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.

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
nickel (massive)
Hazard statements
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
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*	*<45%*
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*	*<40%*
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 %*	*<15%*

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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: 7440-02-0 *EINECS: 231-111-4* *Index number: 028-002-00-7* *Reg.nr.: 01-2119438727-29*	*nickel (massive)* *Carc. 2, H351; STOT RE 1, H372; Skin Sens. 1, H317*	*<10%*

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 or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
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.
Protect unharmed eye.
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
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 unavoidabledeposit of dust must be regularly removed.
Information about fire - and explosion protection: *No special measures required.*

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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.*

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/m³ als Cu*
WEL (Great Britain)	*Short-term value: 2** mg/m³ Long-term value: 0.2* 1** mg/m³ *fume **dusts and mists (as Cu)*
OEL (Ireland)	*Long-term value: 0.2* 1** mg/m³ *fume **dusts and mists*
7440-66-6 zinc	
MAK (Germany)	*Long-term value: 0.1A* 2E** mg/m³ *alveolengängig; **einatembar*
144-62-7 oxalic acid	
IOELV (EU)	*Long-term value: 1 mg/m³*
AGW (Germany)	*Long-term value: 1 E mg/m³ 1(I);H, EU, 13*
WEL (Great Britain)	*Short-term value: 2 mg/m³ Long-term value: 1 mg/m³*
OEL (Ireland)	*Long-term value: 1 mg/m³ IOELV*

Regulatory information
MAK (Germany): MAK- und BAT-Liste
WEL (Great Britain): EH40/2020
OEL (Ireland): 2021 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)
144-62-7 oxalic acid: BIA 8275(D)
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:
Pregnant women should strictly avoid inhalation or skin contact.
Do not eat, drink, smoke or sniff while working.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Respiratory protection:
Use suitable respiratory protective device in case of insufficient ventilation.
Filter P2

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Hand protection

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
heat-resistant glove with nitrile inner glove.
Protective gloves
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
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.
Recommended thickness of the material: ≥ - mm
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.
Value for the permeation: Level ≤ 6
Eye/face protection
in cases of application: protective goggles

Tightly sealed goggles

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.*
Melting point/freezing point:	*890-920 °C (Metall)*
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/cm³*
Relative density	*Not determined.*
Vapour density	*Not applicable.*
Particle characteristics	*See item 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.*

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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.*
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*	*25,033 mg/kg (rat)*
Dermal	*LD50*	*73,431 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
May cause an allergic skin reaction.
Germ cell mutagenicity *Based on available data, the classification criteria are not met.*
Carcinogenicity
Suspected of causing cancer.
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
May cause damage to organs through prolonged or repeated exposure.

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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:
Size condition for classification CLP Annex VI - 029-024-00-X Copper: not fulfilled, therefore no classification onenvironmental hazard.
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:
Avoid transfer into the environment.
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.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Contact manufacturer for recycling information.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
European waste catalogue
17 04 09: metal waste contaminated with hazardous substances*
HP 5: Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
HP 7: Carcinogenic
HP 10: Toxic for reproduction

overpack:
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.*

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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 listed.*
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 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.

Reasons for changes:
01.04.2017: adaption to Regulation 453/2010/EG, 830/2015/EU, 2012/18/EU
22.08.2018: section 8, 7, 13, 15
04.09.2019: section1 UFI
23.04.2020: section 1, 2, 3, 11
10.09.2020: section 1, 11, 15
02.03.2022: section 15, 16
27.03.2023: section 2, 8.2, 11, 12, 15
Information referred to in Annex I, point 1.3.4.2 of Regulation 1272/2008/EC:
GHS07, GHS08
warning
potassium pentaborate
nickel
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H361fd suspect of damaging fertility. Suspected of damageing the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure

Relevant phrases
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.

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H318 Causes serious eye damage.
H351 Suspected of causing cancer.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
Contact: *Dr. M. Probst*
Version number of previous version: *7*
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
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
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
Repr. 2: Reproductive toxicity – Category 2
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Safety data sheet *SD3018*