

Safety data sheet

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

Printing date 16.03.2023

Version number 10 (replaces version 9)

Revision: 16.08.2022

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

1.1 Product identifier

Trade name: Soft solder and tinning paste PbSn(Sb), SnPb(Sb)
Weichlöt und Verzinnungspaste PbSn(Sb), SnPb(Sb)
Sn 20,0-80,0%, Pb 20,0-80,0%, Sb 0,5-2,0%
Sn60Pb40, Pb60Sn40, Pb74Sn25Sb1

**UFI:**

Sn60Pb40: TFH9-S0VK-M00C-0PEU
 Pb60Sn40: 1C92-U34Y-900W-95FW
 Pb74Sn25Sb1: 6E92-A3UC-M00D-YH1Y

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 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

Repr. 1A H360FD-H362 May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

STOT RE 1 H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

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STOT SE 3 H335 May cause respiratory 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

GHS05 GHS07 GHS08 GHS09

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

zinc chloride

lead

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts

Isotridecanol 6EO

Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

H314 Causes severe skin burns and eye damage.

H360FD-H362 May damage fertility. May damage the unborn child. May cause harm to breast-fed children.

H335 May cause respiratory irritation.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P263 Avoid contact during pregnancy and while nursing.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Restricted to professional users.

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: 7439-92-1 EINECS: 231-100-4 Index number: 082-013-00-1 Reg.nr.: 01-2119513221-59	lead ⚠ Repr. 1A, H360FD-H362; STOT RE 1, H372; ⚠ Aquatic Acute 1, H400 (M=1); Aquatic Chronic 1, H410 (M=10) Specific concentration limit: Repr. 1A; H360D: C ≥ 0.03 %	<50%
CAS: 7646-85-7 EINECS: 231-592-0 Index number: 030-003-00-2 Reg.nr.: 01-2119472431-44	zinc chloride ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	<10%
CAS: 68411-30-3 EINECS: 270-115-0 Reg.nr.: 01-2119489428-22	Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Aquatic Chronic 3, H412	<10%

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CAS: 69011-36-5 Reg.nr.: <1t/year	Isotridecanol 6EO ☞ Eye Dam. 1, H318; ☞ Acute Tox. 4, H302	<5%
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8 Reg.nr.: 01-2119487950-27	ammonium chloride ☞ Acute Tox. 4, H302; Eye Irrit. 2, H319	<5%
SVHC		
7439-92-1	lead	

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:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

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

After swallowing:

Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

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: Use fire extinguishing methods suitable to surrounding conditions.

5.2 Special hazards arising from the substance or mixture No further relevant information available.

5.3 Advice for firefighters

Protective equipment: Mouth respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

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

Thorough dedusting.

Ensure good ventilation/exhaustion at the workplace.

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:

Unsuitable material for receptacle: aluminium.

Unsuitable container material: zinc

Unsuitable material for receptacle: steel.

Information about storage in one common storage facility: *Not required.*

Further information about storage conditions: *Keep container tightly sealed.*

Storage class: 6.1 D

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:

7439-92-1 lead

AGW (EU)	Long-term value: 0.15 mg/m ³
BOELV (EU)	Long-term value: 0.15 mg/m ³ as Pb
MAK (Germany)	vgl. Abschn. XII
OEL (Ireland)	Long-term value: 0.15 mg/m ³ Repr1A, BOELV

7440-31-5 tin

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.

7646-85-7 zinc chloride

MAK (Germany)	Long-term value: 0.1A* 2E** mg/m ³ *alveolengängig; **einateubar
WEL (Great Britain)	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³
OEL (Ireland)	Short-term value: 2 mg/m ³ Long-term value: 1 mg/m ³

12125-02-9 ammonium chloride

WEL (Great Britain)	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³
OEL (Ireland)	Short-term value: 20 mg/m ³ Long-term value: 10 mg/m ³

Regulatory information

BOELV (EU): EU 2022/431

MAK (Germany): MAK- und BAT-Liste

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

WEL (Great Britain): EH40/2020

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

7439-92-1 lead: NIOSH 7702(E), OSHA 1006(E), OSHA ID-206(E)

7646-85-7 zinc chloride: NIOSH 7300, 7301, 7303(E) "Zinc", OSHA, ID-121(E)

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

12125-02-9 ammonium chloride: OSHA ID188(E)

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Ingredients with biological limit values:	
7439-92-1 lead	
BAT (EU)	70 µg/dl blood lead
BGW (Germany)	150 µg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: keine Beschränkung Parameter: Blei, AGS

Regulatory information BGW (Germany): TRGS 903**Additional information:** The lists valid during the making were used as basis.**8.2 Exposure controls****Appropriate engineering controls** No further data; see item 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:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

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 P3

Hand protection

Protective gloves

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

Material of gloves

Nitrile rubber, NBR

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: ≥ 0.2 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 **As protection from splashes gloves made of the following materials are suitable:** Nitrile rubber, NBR**Eye/face protection**

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:**

Silver grey

Odour:

Characteristic

Odour threshold:

Not determined.

Boiling point or initial boiling point and boiling range 100 °C**Flammability**

Not determined.

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Lower and upper explosion limitLower: *Not determined.*Upper: *Not determined.*Flash point: *Not applicable.*Decomposition temperature: *Not determined.*

pH at 20 °C 4.1

Viscosity:

Kinematic viscosity *Not applicable.*Dynamic: *Not applicable.*

Solubility

water: *Insoluble.*Partition coefficient n-octanol/water (log value) *Not determined.*

Vapour pressure at 20 °C: 23 hPa

Density and/or relative density

Density at 20 °C: 6.19 g/cm³Relative density *Not determined.*Vapour density *Not applicable.*Particle characteristics *See item 3.***9.2 Other information**

Appearance:

Form: *Pasty*

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 %

Water: 17.0 %

VOC (EC) 0.00 %

Solids content: 75.3 %

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** *No dangerous reactions known.***10.4 Conditions to avoid** *No further relevant information available.*

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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***Harmful if swallowed or if inhaled.***LD/LC50 values relevant for classification:****ATE (Acute Toxicity Estimates)**

Oral LD50 3,341-5,636 mg/kg (rat)

Skin corrosion/irritation*Causes severe skin burns and eye damage.***Serious eye damage/irritation***Causes serious eye damage.***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***May damage fertility. May damage the unborn child. May cause harm to breast-fed children.***STOT-single exposure***May cause respiratory irritation.***STOT-repeated exposure***Causes damage to organs through prolonged or repeated exposure.***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:***Must not reach sewage water or drainage ditch undiluted or unneutralised.**Also poisonous for fish and plankton in water bodies.**Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water**Do not allow product to reach ground water, water course or sewage system, even in small quantities.**Danger to drinking water if even extremely small quantities leak into the ground.*

SECTION 13: Disposal considerations

13.1 Waste treatment methods**Recommendation***Must not be disposed together with household garbage. Do not allow product to reach sewage system.***European waste catalogue***16 05 07*: discarded inorganic chemicals consisting of or containing hazardous substances**HP 5: Specific Target Organ Toxicity (STOT)/Aspiration Toxicity**HP 6: Acute Toxicity**HP 8: Corrosive*

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HP 10: Toxic for reproduction

HP 14: Ecotoxic

cleaned plastic bottle:

15 01 02: plastic packaging

Uncleaned packaging: 15 01 10*: packaging containing residues of or contaminated by hazardous substances**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agents:**

Remove residues mechanically, clean the packaging with soap solution or with alcohol.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, IMDG, IATA

UN3260

14.2 UN proper shipping name

ADR

3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC CHLORIDE), ENVIRONMENTALLY HAZARDOUS

IMDG

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC CHLORIDE, lead), MARINE POLLUTANT

IATA

CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC CHLORIDE)

14.3 Transport hazard class(es)

ADR, IMDG



Class

8 Corrosive substances.

Label

8

IATA



Class

8 Corrosive substances.

Label

8

14.4 Packing group

ADR, IMDG, IATA

III

14.5 Environmental hazards:

Product contains environmentally hazardous substances: lead

Marine pollutant:

Symbol (fish and tree)

Special marking (ADR):

Symbol (fish and tree)

14.6 Special precautions for user

Warning: Corrosive substances.

Hazard identification number (Kemler code):

80

EMS Number:

F-A,S-B

Segregation groups

(SGG1) Acids

Stowage Category

B

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ)

5 kg

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

Transport category

3

Tunnel restriction code

E

IMDG

Limited quantities (LQ)

5 kg

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Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 1000 g

UN "Model Regulation":
 UN 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.
 (ZINC CHLORIDE), 8, III, ENVIRONMENTALLY HAZARDOUS

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.***Seveso category E1** *Hazardous to the Aquatic Environment***Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t**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: 30, 63, 65, 72***Regulation (EU) No 649/2012**

7439-92-1 | lead

Annex I Part 1

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

7439-92-1 | lead

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 3 (Self-assessment): extremely hazardous for water.***Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

7439-92-1 | lead

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:

14.08.2018: section 3, 15 SVHC lead

05.02.2019: section 11.1

02.05.2019: section 3

06.02.2020: section 1

01.12.2020: section 3, 7, 11, 15

30.12.2020: section 2, 3, 11, 13, 14

02.11.2021: section 8.1, 15

16.08.2022: section 9, 12, 15

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

Relevant phrases

H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H360FD May damage fertility. May damage the unborn child.
 H362 May cause harm to breast-fed children.
 H372 Causes damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.

Recommended restriction of use For commercial use only.**Contact:** Dr. M. Probst**Version number of previous version:** 9**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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Repr. 1A: Reproductive toxicity – Category 1A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 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
 Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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