

# Safety data sheet

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

Printing date 19.04.2024

Version number 7 (replaces version 6)

Revision: 30.05.2023

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

**1.1 Product identifier**

Trade name: **Aluminium soft solder paste Sn97Cu3**  
**Aluminiumweichlötpaste Sn97Cu3**

UFI: 3TF9-50S1-S00Y-F6CM

**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**

Brazing alloy

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](mailto: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](mailto: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



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

**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

Signal word *Danger*

**Hazard-determining components of labelling:**

2-aminoethanol

2,2'-iminodiethanol

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fluoroboric acid

**Hazard statements**

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

**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.

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.

P310 Immediately call a POISON CENTER/doctor.

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.

**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: 141-43-5 EINECS: 205-483-3 Index number: 603-030-00-8 Reg.nr.: 01-2119486455-28	2-aminoethanol ⚠ Skin Corr. 1B, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Aquatic Chronic 3, H412 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	<10%
CAS: 111-42-2 EINECS: 203-868-0 Index number: 603-071-00-1 Reg.nr.: 01-2119488930-28	2,2'-iminodiethanol ⚠ STOT RE 2, H373; ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315	<10%
CAS: 16872-11-0 EINECS: 240-898-3 Index number: 009-010-00-X Reg.nr.: <1t/year	fluoroboric acid ⚠ Skin Corr. 1B, H314 Specific concentration limits: Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 %	<10%
CAS: 68139-49-6	Fettalkoholethoxylat ⚠ Eye Irrit. 2, H319	<5%
CAS: 7440-50-8 EINECS: 231-159-6 Index number: 029-024-00-X Reg.nr.: 01-2119480154-42	copper ⚠ Aquatic Chronic 2, H411	<2.5%
CAS: 7783-49-5 EINECS: 232-001-9	zinc fluoride ⚠ Acute Tox. 3, H301; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315	<2.5%

**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.**After inhalation:** In case of unconsciousness place patient stably in side position for transportation.**After skin contact:**

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

Immediately wash with water and soap and rinse thoroughly.

**After eye contact:**

Protect unharmed eye.

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

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**After swallowing:** 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:** No special measures required.

## 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 section 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

Ensure that suitable extractors are available on processing machines

Thorough dedusting.

**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:** Store only in the original receptacle.

**Information about storage in one common storage facility:** Store away from foodstuffs.

#### Further information about storage conditions:

Protect from frost.

Keep container tightly sealed.

**Storage class:** 8 B

**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:**

#### 7440-31-5 tin

MAK (Germany)

vgl. Abschn. IIb

OEL (Ireland)

Short-term value: 0.2\*\* mg/m<sup>3</sup>

Long-term value: 2\* 0.1\*\* mg/m<sup>3</sup>

IOELV, \*metal, oxide, inorg. compds., \*\*org. compds.

#### 141-43-5 2-aminoethanol

IOELV (EU)

Short-term value: 7.6 mg/m<sup>3</sup>, 3 ppm

Long-term value: 2.5 mg/m<sup>3</sup>, 1 ppm

Skin

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AGW (Germany)	Long-term value: 0.5 mg/m <sup>3</sup> , 0.2 ppm 1(I);DFG, EU, H, Y, Sh, 11
WEL (Great Britain)	Short-term value: 7.6 mg/m <sup>3</sup> , 3 ppm Long-term value: 2.5 mg/m <sup>3</sup> , 1 ppm Sk
OEL (Ireland)	Short-term value: 7.6 mg/m <sup>3</sup> , 3 ppm Long-term value: 2.5 mg/m <sup>3</sup> , 1 ppm Skin, IOELV
<b>111-42-2 2,2'-iminodiethanol</b>	
AGW (Germany)	Long-term value: 0.5 mg/m <sup>3</sup> , 0.11 ppm 1(I);AGS, H, Sh, Y, 11, 6
OEL (Ireland)	Long-term value: 1* mg/m <sup>3</sup> , 0.2 ppm *Inhalable fraction and vapour
<b>7440-50-8 copper</b>	
MAK (Germany)	Long-term value: 0.01 A mg/m <sup>3</sup> als Cu
WEL (Great Britain)	Short-term value: 2** mg/m <sup>3</sup> Long-term value: 0.2* 1** mg/m <sup>3</sup> *fume **dusts and mists (as Cu)
OEL (Ireland)	Long-term value: 0.2* 1** mg/m <sup>3</sup> *fume **dusts and mists
<b>7783-49-5 zinc fluoride</b>	
IOELV (EU)	Long-term value: 2.5 mg/m <sup>3</sup> as F
AGW (Germany)	Long-term value: 1 E mg/m <sup>3</sup> 4(II);als Fluor berechnet; EU, DFG, Y, H
WEL (Great Britain)	Long-term value: 2.5 mg/m <sup>3</sup> as F
OEL (Ireland)	Long-term value: 2.5 mg/m <sup>3</sup> as F, IOELV

**Regulatory information**

MAK (Germany): MAK- und BAT-Liste

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

IOELV (EU): (EU) 2019/1831

AGW (Germany): TRGS 900

WEL (Great Britain): EH40/2020

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

141-43-5 2-aminoethanol: DFG 1(D, E), BIA 6120(D), OSHA PV 2111(E), NIOSH 3509, 2007(E)

111-42-2 2,2'-iminodiethanol: DFG 1(D, E), BIA 7052(D), OSHA PV 2018(E), NIOSH 3509(E)

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

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

**Ingredients with biological limit values:****7783-49-5 zinc fluoride**

BGW (Germany)	7.0 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Fluorid
	4.0 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: vor nachfolgender Schicht Parameter: Fluorid

**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 section 7.**Appropriate engineering controls:**

Ensure adequate ventilation.

Remove the fumes by means of suitable suction devices.

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## Individual protection measures, such as personal protective equipment

### General protective and hygienic measures:

*Do not eat, drink, smoke or sniff while working.*

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes and skin.*

**Respiratory protection: filter ABEK**

**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*

*Butyl rubber, BR*

*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:  $\geq 0.33$  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  $\leq 6$*

**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:	Grey
Odour:	Characteristic
Odour threshold:	Not determined.
Boiling point or initial boiling point and boiling range	170 °C
Flammability	Not determined.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Auto-ignition temperature:	370 °C
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:	Not determined.
Relative density	Not determined.
Vapour density	Not applicable.

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**Particle characteristics**

See section 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:**

13.0 %

**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:** To avoid thermal decomposition do not overheat.**10.3 Possibility of hazardous reactions** Develops corrosive gases/fumes.**10.4 Conditions to avoid** No further relevant information available.**10.5 Incompatible materials:** No further relevant information available.**10.6 Hazardous decomposition products:** Corrosive 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	>7,720 mg/kg (rat)
Dermal	LD50	10,724 mg/kg (rabbit)
Inhalative	LC50/4 h	72.3 mg/l

**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.

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**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT-single exposure**

May cause respiratory irritation.

**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** For information on endocrine disrupting properties see section 11.

### 12.7 Other adverse effects

**Additional ecological information:**

**General notes:**

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

#### European waste catalogue

06 04 05\*: wastes containing other heavy metals

HP8: Corrosive

overpack:

15 01 01: paper and cardboard 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

UN1759

### 14.2 UN proper shipping name

ADR

1759 CORROSIVE SOLID, N.O.S. mixture

IMDG, IATA

CORROSIVE SOLID, N.O.S. mixture

### 14.3 Transport hazard class(es)

ADR, IMDG, IATA



**Class**

8 Corrosive substances.

**Label**

8

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<b>14.4 Packing group</b>	<b>III</b>
<b>ADR, IMDG, IATA</b>	
<b>14.5 Environmental hazards:</b>	
<b>Marine pollutant:</b>	<i>No</i>
<b>14.6 Special precautions for user</b>	<i>Warning: Corrosive substances.</i>
<b>Hazard identification number (Kemler code):</b>	<i>80</i>
<b>EMS Number:</b>	<i>F-A,S-B</i>
<b>Segregation groups</b>	<i>(SGG1) Acids, (SGG18) alkalis</i>
<b>Stowage Category</b>	<i>A</i>
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	<i>Not applicable.</i>

**Transport/Additional information:**

<b>ADR</b>	
<b>Limited quantities (LQ)</b>	<i>5 kg</i>
<b>Excepted quantities (EQ)</b>	<i>Code: E1</i>
	<i>Maximum net quantity per inner packaging: 30 g</i>
	<i>Maximum net quantity per outer packaging: 1000 g</i>
<b>Transport category</b>	<i>3</i>
<b>Tunnel restriction code</b>	<i>E</i>

<b>IMDG</b>	
<b>Limited quantities (LQ)</b>	<i>1 kg</i>
<b>Excepted quantities (EQ)</b>	<i>Code: E2</i>
	<i>Maximum net quantity per inner packaging: 30 g</i>
	<i>Maximum net quantity per outer packaging: 500 g</i>
<b>UN "Model Regulation":</b>	<i>UN 1759 CORROSIVE SOLID, N.O.S. MIXTURE, 8, III</i>

## 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 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.*

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**Reasons for changes:**

24.08.2015: adaption to Regulation 453/2010/EC, 830/2015/EU, 2012/18/EU

02.05.2017: recipe adjustment, section 2, 3

07.07.2017: section 3

19.03.2020: section 1

11.01.2021: section 1, 2, 3, 8, 11, 13, 15, 16

30.05.2023: section 2, 3, 8, 15

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

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

H412 Harmful 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)

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. 3: Acute toxicity – Category 3

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

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

**Safety data sheet SD3422**