

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

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

1.1 Product identifier

Trade name: Lötwasser
Solder liquid
UFI: 2ED8-908M-N00F-4DPH



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



GHS05 corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

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 GHS09

Signal word Danger

Hazard-determining components of labelling:

zinc chloride

Hazard statements

H314 Causes severe skin burns and eye damage.

(Contd. on page 2)

EU

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

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Trade name: Lötwasser
Solder liquid

(Contd. of page 1)

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

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.

Labelling of packages where the contents do not exceed 125 ml

Hazard pictograms



GHS05 GHS07 GHS09

Signal word Danger

Hazard-determining components of labelling:

zinc chloride

Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dusts or mists.

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.

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: 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 %	<25%
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	<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: Immediately remove any clothing soiled by the product.

After inhalation:

Supply fresh air; consult doctor in case of complaints.

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

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 3)

EU —

Safety data sheet
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Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 2)

Seek medical treatment.

After eye contact:

Protect unharmed eye.

Seek medical treatment.

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.

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: CO₂, powder or water spray. *Fight larger fires with water spray.*

5.2 Special hazards arising from the substance or mixture Hydrogen chloride (HCl)

5.3 Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.

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 product to reach sewage system or any water course.

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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

Ensure that suitable extractors are available on processing machines

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about fire - and explosion protection: *Keep respiratory protective device available.*

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.

Store away from metals.

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

Storage class: 8 B

7.3 Specific end use(s) *No further relevant information available.*

(Contd. on page 4)

EU —

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 3)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

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

WEL (Great Britain): EH40/2020

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

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

7646-85-7 zinc chloride: NIOSH 7300, 7301, 7303(E) "Zinc", 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 item 7.

Appropriate engineering controls:

Ensure adequate ventilation.

Remove the fumes by means of suitable suction devices.

Ensure adequate ventilation.

Remove the fumes by suitable suction devices.

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:

Use suitable respiratory protective device in case of insufficient ventilation.

Filter P2

Filter B

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: ≥ 0.4 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

(Contd. on page 5)

EU —

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 4)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Colour:	Yellowish
Odour:	Characteristic
Odour threshold:	Not determined.
Boiling point or initial boiling point and boiling range	100 °C
Flammability	Not applicable.
Lower and upper explosion limit	
Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Decomposition temperature:	Not determined.
pH at 20 °C	5
Viscosity:	
Kinematic viscosity	Not determined.
Dynamic:	Not determined.
Solubility	
water:	Fully miscible.
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:	1.18 g/cm³
Relative density	Not determined.
Vapour density	Not determined.

9.2 Other information

Appearance:

Form: Fluid

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:

0.0 %

Organic solvents:

75.4 %

Water:

0.00 %

VOC (EC)

24.5 %

Solids content:

Change in condition

Not determined.

Evaporation rate

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

(Contd. on page 6)

EU —

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 5)

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 oxidising agents.

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	4,860-5,435 mg/kg (rat)
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7646-85-7 zinc chloride

Oral	LD50	1,100-1,260 mg/kg (rat)
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12125-02-9 ammonium chloride

Oral	LD50	1,650 mg/kg (rat)
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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 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

The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

Remark: Toxic for fish

Additional ecological information:

General notes:

Toxic for aquatic organisms

The product contains heavy metals. Avoid transfer into the environment. Specific preliminary treatments are necessary

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

(Contd. on page 7)

EU

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 6)

*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

06 03 13*: solid salts and solutions containing heavy metals

HP 8: Corrosive

HP 14: Ecotoxic

sales packaging:

15 01 02: plastic packaging

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: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, IMDG, IATA

UN1840

14.2 UN proper shipping name

ADR

1840 ZINC CHLORIDE SOLUTION, ENVIRONMENTALLY HAZARDOUS

IMDG

ZINC CHLORIDE SOLUTION, MARINE POLLUTANT

IATA

ZINC CHLORIDE SOLUTION

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:

Marine pollutant:

Product contains environmentally hazardous substances: zinc chloride

Yes

Symbol (fish and tree)

Symbol (fish and tree)

Warning: Corrosive substances.

80

F-A, S-B

(SGG1) Acids, (SGG7) heavy metals and their salts (including their organometallic compounds)

Segregation groups

A

Stowage Category

A

14.7 Maritime transport in bulk according to IMO instruments

Not applicable.

(Contd. on page 8)

EU —

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

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Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 7)

Transport/Additional information:**ADR****Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E1

*Maximum net quantity per inner packaging: 30 ml**Maximum net quantity per outer packaging: 1000 ml***Transport category**

3

Tunnel restriction code

E

IMDG**Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E1

*Maximum net quantity per inner packaging: 30 ml**Maximum net quantity per outer packaging: 1000 ml***UN "Model Regulation":****UN 1840 ZINC CHLORIDE SOLUTION, 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 E2** *Hazardous to the Aquatic Environment***Qualifying quantity (tonnes) for the application of lower-tier requirements** 200 t**Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 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: 3, 65***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 3 (Self-assessment): extremely 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:**

23.04.2015: chapter 7 LGK

14.10.2015: chapter 1, 8, 15 adaption to Regulation 453/2010/EG, 830/2015/EU, 18/2012/EU

10.03.2017: chapter 2, 11, 12, 13, 15

30.04.2018: adaption to Regulation 2016/918/EU, chapter 13

08.01.2020: section 1 UFI

19.01.2022: section 11, 15, 16

02.02.2023: section 1, 11, 12, 14, 15

(Contd. on page 9)

EU

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

Printing date 22.03.2023

Version number 8 (replaces version 7)

Revision: 02.02.2023

Trade name: Lötwasser
Solder liquid

(Contd. of page 8)

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.
 H319 Causes serious eye irritation.
 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: 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
 Skin Corr. 1B: Skin corrosion/irritation – Category 1B
 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
 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 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

Safety data sheet SD3033

EU —