LÖTTECHNIK

Safety data sheet

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

Printing date 31.01.2025 Version number 8 Revision: 31.01.2025

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

1.1 Product identifier

Trade name: Solder liquid "KD" Lötwasser KD

UFI: 46E8-U0G6-D00W-2FX3

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:

(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



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.



H335 May cause respiratory irritation. STOT SE 3

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

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Trade name: Solder liquid "KD" Lötwasser KD

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Hazard statements

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

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.

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.

H335 May cause respiratory irritation.

Precautionary statements

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

Do not breathe dust/fume/gas/mist/vapours/spray. P260

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.

Immediately call a POISON CENTER/doctor. P310

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.

CAS: 7646-85-7	zinc chloride	<50%
EINECS: 231-592-0	Skin Corr. 1B, H314	
Index number: 030-003-00-2	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	
Reg.nr.: 01-2119472431-44	♠ Acute Tox. 4, H302	
	Špecific concentration limit: STOT SE 3; H335: C ≥ 5 %	
CAS: 67-63-0 EINECS: 200-661-7	propan-2-ol	<5%
	♠ Flam. Liq. 2, H225	
Index number: 603-117-00-0		
Reg.nr.: 01-2119457558-25	·	
CAS: 12125-02-9 EINECS: 235-186-4	ammonium chloride	<5%
	♠ Acute Tox. 4, H302; Eye Irrit. 2, H319	
Index number: 017-014-00-8	, , , , , , , , , , , , , , , , , , ,	
Reg.nr.: 01-2119487950-27		

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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.

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

After skin contact:

Seek medical treatment.

Immediately wash with water and soap and rinse thoroughly.

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

In case of fire, the following can be released:

Hydrogen chloride (HCI)

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

Ensure adequate ventilation

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:

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

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

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about fire - and explosion protection: No special measures required.

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7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from foodstuffs. Store separately 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.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with lin	Ingredients with limit values that require monitoring at the workplace:		
25322-68-3 Polyethylene glycol			
AGW (Germany)	Long-term value: 200 E mg/m³ 2(II);DFG, Y		
67-63-0 propan-2-ol			
WES (Australia)	Short-term value: 1230 mg/m³, 500 ppm Long-term value: 983 mg/m³, 400 ppm		
AGW (Germany)	Long-term value: 500 mg/m³, 200 ppm 2(II);DFG, Y		
WEL (Great Britain)	Short-term value: 1250 mg/m³, 500 ppm Long-term value: 999 mg/m³, 400 ppm		
OEL (Ireland)	Short-term value: 400 ppm Long-term value: 200 ppm Skin		
12125-02-9 ammonium chloride			
WES (Australia)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ fume		
WEL (Great Britain)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³		
OEL (Ireland)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³		

Regulatory information

AGW (Germany): TRGS 900

WES (Australia): Workplace exposure standards for airborne contaminants

WEL (Great Britain): EH40/2020

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

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

67-63-0 propan-2-ol: BIA 8415(D), MétroPol Fiche 077 Alcools en C3 à C8(F), MTA/MA-016/A89(ESP), DFG (D, E)

Solvent mixtures 6

7646-85-7 zinc chloride: NIOSH 7300, 7301, 7303(E) "Zinc", OSHA, ID-121(E)	
DNELs	
7646-85-7 zinc chloride	
Dermal DNEL, kurzzeit 8.3 mg/kg /KG/Tag (worker)	
Inhalative DNEL, kurzzeit 1 mg/m3 (worker)	
Ingredients with biological limit values:	
67-63-0 propan-2-ol	
BGW (Germany) 25 mg/l Untersuchungsmaterial: Vollblut Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton	
25 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Aceton	
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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

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:

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 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

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



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: Yellowish Odour: Characteristic Odour threshold: Not determined. Melting point/freezing point: Not determined

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

Flammability Not applicable.

Lower and upper explosion limit

Not determined. Lower: Upper: Not determined. Flash point: Not applicable. **Decomposition temperature:** Not determined.

pH at 20 °C 4.5

Viscosity:

Kinematic viscosity Not determined. Dynamic: Not determined.

Solubility

water: Fully miscible.

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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: 1.3 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:

Organic solvents: 43% VOC (EC) 4.32 %

Change in condition

Evaporation rate Not determined.

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 various metals.

Reacts with metals forming hydrogen.

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 Hydrogen chloride (HCI)

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 3,502-3,959 mg/kg (rat)

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7646-85-7 zinc chloride

Oral LD50 1,100-1,260 mg/kg (rat)

Primary irritant effect:

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: Very toxic for fish

Additional ecological information:

General notes:

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

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

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

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

HP 6: Acute Toxicity HP 8: Corrosive HP 14: Ecotoxic

cleaned 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.

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Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, IMDG, IATA

14.2 UN proper shipping name

3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ZINC **ADR**

CHLORIDE), ENVIRONMENTALLY HAZARDOUS

IMDG CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ZINC

UN3264

CHLORIDE), MARINE POLLUTANT

IATA CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ZINC

CHLORIDE)

14.3 Transport hazard class(es)

ADR, IMDG



Class 8 Corrosive substances.

Label **IATA**

Class 8 Corrosive substances.

Label

14.4 Packing group ADR, IMDG, IATA 11

14.5 Environmental hazards:

Marine pollutant: Yes

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 **Stowage Category**

SW2 Clear of living quarters. **Stowage Code**

14.7 Maritime transport in bulk according to IMO

instruments Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ) 1L

Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

Transport category Tunnel restriction code Ε

Limited quantities (LQ) 1L

Excepted quantities (EQ) Code: E2

Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. **UN "Model Regulation":**

(ZINC CHLORIDE), 8, II, ENVIRONMENTALLY HAZARDOUS (Contd. on page 9)

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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 included.

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:

12.05.2015: chapter 2 - classification

15.10.2015: chapter 1, 8, 15 adaption to Regulation 453/2010/EC, 830/2015/EU, 18/2012/EU

13.02.2018: chapter 2, 8, 11, 13, 15

10.01.2020: chapter 1

16.02.2021: chapter 1, 3, 11, 15, 16

24.02.2023: chapter 12, 15

31.01.2025: chapter 8, 11

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

Relevant phrases

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eve irritation.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

H410 Very 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)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organisation

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ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)

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) DNEL: Derived No-Effect Level (REACH)

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 Flam. Liq. 2: Flammable liquids - Category 2

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

Safety data sheet SD3042

EU —