

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

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

1.1 Product identifier

Trade name: Lötwasser ZD-spezial
soldering liquid ZD-spezial
UFI: SPD8-T0AT-J00X-3EEQ



**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-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.



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

hydrogen chloride

(Contd. on page 2)

EU

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 1)

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

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

hydrogen chloride

Hazard statements

H314 Causes severe skin burns and eye damage.

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.

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 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	<50%
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8 Reg.nr.: 01-2119487950-27	ammonium chloride 	<25%

(Contd. on page 3)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
soldering liquid ZD-spezial

(Contd. of page 2)		
CAS: 7647-01-0 EINECS: 231-595-7 Index number: 017-002-00-2 Reg.nr.: HCl Gas : 01-2119484862-27	hydrogen chloride  Met. Corr. 1, H290; Skin Corr. 1B, H314; Eye Dam. 1, H318;  Acute Tox. 4, H302; STOT SE 3, H335 Specific concentration limits: Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 % STOT SE 3; H335: C ≥ 10 %	<10%
CAS: 107-21-1 EINECS: 203-473-3 Index number: 603-027-00-1 Reg.nr.: 01-2119456816-28	ethanediol  STOT RE 2, H373;  Acute Tox. 4, H302	<5%
CAS: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0 Reg.nr.: 01-2119457558-25	propan-2-ol  Flam. Liq. 2, H225;  Eye Irrit. 2, H319; STOT SE 3, H336	<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:

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.

Supply fresh air.

Seek medical treatment in case of complaints.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

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

Seek medical treatment.

After eye contact:

Rinse opened eye for several minutes under running water.

Protect unharmed eye.

Seek medical treatment.

After swallowing:

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

Call for a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

Hazards

Danger of gastric perforation.

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.

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 (HCl)

5.3 Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.

Wear self-contained respiratory protective device.

(Contd. on page 4)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 3)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

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

Open and handle receptacle with care.

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.

Do not store together with textiles.

Further information about storage conditions:

Protect from frost.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

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:

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

7647-01-0 hydrogen chloride

IOELV (EU)	Short-term value: 15 mg/m ³ , 10 ppm Long-term value: 8 mg/m ³ , 5 ppm
AGW (Germany)	Long-term value: 3 mg/m ³ , 2 ppm 2(l);DFG, EU, Y
WEL (Great Britain)	Short-term value: 8 mg/m ³ , 5 ppm Long-term value: 2 mg/m ³ , 1 ppm (gas and aerosol mists)
OEL (Ireland)	Short-term value: 15 mg/m ³ , 10 ppm Long-term value: 8 mg/m ³ , 5 ppm IOELV

(Contd. on page 5)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
soldering liquid ZD-spezial

(Contd. of page 4)

107-21-1 ethanediol	
IOELV (EU)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin
AGW (Germany)	Long-term value: 26 mg/m ³ , 10 ppm 2(l);DFG, EU, H, Y, 11
WEL (Great Britain)	Short-term value: 104** mg/m ³ , 40** ppm Long-term value: 10* 52** mg/m ³ , 20** ppm Sk *particulate **vapour
OEL (Ireland)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin, IOELV
67-63-0 propan-2-ol	
AGW (Germany)	Long-term value: 500 mg/m ³ , 200 ppm 2(l);DFG, Y
WEL (Great Britain)	Short-term value: 1250 mg/m ³ , 500 ppm Long-term value: 999 mg/m ³ , 400 ppm
OEL (Ireland)	Short-term value: 400 ppm Long-term value: 200 ppm Skin

Regulatory information

WEL (Great Britain): EH40/2020

OEL (Ireland): 2024 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:

7647-01-0 hydrogen chloride: BIA 6640(D), MTA/MA-019/A90(ESP), OSHA ID-174SG(E), MétroPol Fiche 009 Anions minéraux(F)

107-21-1 ethanediol: NIOSH 5523 "Glycols"(E)

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)

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

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:**

The usual precautionary measures are to be adhered to when handling chemicals.

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 B

Suitable respiratory protective device recommended.

(Contd. on page 6)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 5)

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: ≥ 0.33 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 ≤ 6

Eye/face protection



Tightly sealed goggles

Body protection: Acid resistant protective 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.

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

Lower and upper explosion limit

Lower:	Not determined.
Upper:	Not determined.
Flash point:	Not applicable.
Auto-ignition temperature:	410 °C
Decomposition temperature:	Not determined.
pH	Not determined.

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: 1.27 g/cm³

Relative density Not determined.

Vapour density Not determined.

9.2 Other information

Appearance: No further relevant information available.

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: 2.0 %

VOC (EC) 2.0 %

2.00 %

(Contd. on page 7)

EU

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 6)

Change in condition	
Evaporation rate	<i>Not determined.</i>
Information with regard to physical hazard classes	
Explosives	<i>Void</i>
Flammable gases	<i>Void</i>
Aerosols	<i>Void</i>
Oxidising gases	<i>Void</i>
Gases under pressure	<i>Void</i>
Flammable liquids	<i>Void</i>
Flammable solids	<i>Void</i>
Self-reactive substances and mixtures	<i>Void</i>
Pyrophoric liquids	<i>Void</i>
Pyrophoric solids	<i>Void</i>
Self-heating substances and mixtures	<i>Void</i>
Substances and mixtures, which emit flammable gases in contact with water	<i>Void</i>
Oxidising liquids	<i>Void</i>
Oxidising solids	<i>Void</i>
Organic peroxides	<i>Void</i>
Corrosive to metals	<i>Void</i>
Desensitised explosives	<i>Void</i>

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 (HCl)

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 | 2,436-2,628 mg/kg

7646-85-7 zinc chloride

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

12125-02-9 ammonium chloride

Oral | LD50 | 1,650 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 *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.*

(Contd. on page 8)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 7)

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 No further relevant information available.

Remark: Very toxic for fish

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.

Very toxic for aquatic organisms

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

Uncleaned packaging: 15 01 10*: packaging containing residues of or contaminated by hazardous substances

Recommendation:

Packaging may be reused or recycled after cleaning.

Disposal must be made according to official regulations.

Recommended cleansing agents:

Water, if necessary together with cleansing agents.

Diluted caustic solution.

SECTION 14: Transport information

14.1 UN number or ID number

ADR, IMDG, IATA

UN3264

14.2 UN proper shipping name

ADR

3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
 (HYDROCHLORIC ACID, ZINC CHLORIDE),
 ENVIRONMENTALLY HAZARDOUS

IMDG

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
 (HYDROCHLORIC ACID, ZINC CHLORIDE), MARINE
 POLLUTANT

IATA

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
 (HYDROCHLORIC ACID, ZINC CHLORIDE)

(Contd. on page 9)

EU

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 8)

14.3 Transport hazard class(es)

ADR, IMDG



Class
 Label
 IATA

8 Corrosive substances.
 8



Class
 Label

8 Corrosive substances.
 8

14.4 Packing group

ADR, IMDG, IATA

II

14.5 Environmental hazards:

Product contains environmentally hazardous substances: zinc chloride

Marine pollutant:

Yes

Symbol (fish and tree)

Symbol (fish and tree)

Warning: Corrosive substances.

Special marking (ADR):**14.6 Special precautions for user****Hazard identification number (Kemler code):**

EMS Number:

80

F-A,S-B

Segregation groups

(SGG1) Acids

Stowage Category

B

Stowage Code

SW2 Clear of living quarters.

14.7 Maritime transport in bulk according to IMO**instruments**

Not applicable.

Transport/Additional information:

ADR

1L

Limited quantities (LQ)

Code: E2

Excepted quantities (EQ)

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

Transport category

2

Tunnel restriction code

E

IMDG

1L

Limited quantities (LQ)

Code: E2

Excepted quantities (EQ)

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

(HYDROCHLORIC ACID, ZINC CHLORIDE), 8, II,

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 included.

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 65

(Contd. on page 10)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
 soldering liquid ZD-spezial

(Contd. of page 9)

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II
<i>None of the ingredients is listed.</i>
REGULATION (EU) 2019/1148
Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))
<i>None of the ingredients is listed.</i>
Annex II - REPORTABLE EXPLOSIVES PRECURSORS
<i>None of the ingredients is listed.</i>
Regulation (EC) No 273/2004 on drug precursors
<i>None of the ingredients is listed.</i>
Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors
<i>None of the ingredients is listed.</i>

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:

31.01.2017: adaption to Regulation 453/2010/EC, 830/2015/EU, 2012/18/EU,
 chapter 8.2, chapter 11 LD50 zinc chloride

04.04.2018: chapter 1, 8, 13

15.02.2021: chapter 1, 3, 15, 16

12.06.2023: chapter 15

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

Relevant phrases

H225 Highly flammable liquid and vapour.

H290 May be corrosive to metals.

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.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

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

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

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

(Contd. on page 11)

EU —

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

Printing date 28.05.2024

Version number 5

Revision: 12.06.2023

Trade name: Lötwasser ZD-spezial
soldering liquid ZD-spezial

(Contd. of page 10)

ATE: Acute toxicity estimate values
Flam. Liq. 2: Flammable liquids – Category 2
Met. Corr. 1: Corrosive to metals – Category 1
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
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
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 SD3036

EU —