

Material Safety Data Sheet

According to 91/155 EEC

Printing date 09.05.2005

Reviewed on 09.05.2005

1 Identification of the substance/preparation and of the company/undertaking

- **Product details**

- **Trade name:** Solder liquid "ZD"

- **Article number:** R241100

- **Application of the substance / the preparation**

Flux for the soft soldering of titan zinc and steel sheet and fine zinc.

- **Manufacturer/Supplier:**

FELDER GMBH

Im Lipperfeld 11

D-46047 Oberhausen

Tel.: 0208/8 50 35-0

Fax.: 0208/2 60 80

<http://www.felder.de>

e-mail: info@felder.de

- **Further information obtainable from:**

Labor

(Mo-Do. 8:00-16:00/ Fr. 8:00-13:00)

Tel.: 0208/ 8 50 35-0

- **Information in case of emergency:**

24 hr. emergency information:

Poison emergency call Berlin

Tel.: 0049-30-1 92 40







2 Composition/information on ingredients

- **Chemical characterization**

- **Description:** Solution of zinc chloride, ammonium chloride, hydrochloric acid in water.

- **Dangerous components:**

CAS: 7646-85-7 EINECS: 231-592-0	zinc chloride	 C,  N; R 22-34-50/53	30.0%
CAS: 7647-01-0 EINECS: 231-595-7	hydrogen chloride	 C; R 34-37	<6.0%
CAS: 12125-02-9 EINECS: 235-186-4	ammonium chloride	 Xn; R 22-36	<5.0%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

3 Hazards identification

- **Hazard description:**



C Corrosive

N Dangerous for the environment

- **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

R 34 Causes burns.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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· **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

4 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:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Do not induce vomiting; call for medical help immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.

5 Fire-fighting measures

- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the substance, its products of combustion or resulting gases:**
In case of fire, the following can be released:
Hydrogen chloride (HCl)
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

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· **Ingredients with limit values that require monitoring at the workplace:**

7646-85-7 zinc chloride

OES Short-term value: 2 mg/m³
Long-term value: 1 mg/m³
fume

7647-01-0 hydrogen chloride

OES Short-term value: 8 mg/m³, 5 ppm
Long-term value: 2 mg/m³, 1 ppm
gas and aerosol mists; ILV

12125-02-9 ammonium chloride

OES Short-term value: 20 mg/m³
Long-term value: 10 mg/m³

· **Additional information:** The lists valid during the making were used as basis.

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

No tests at protective gloves were accomplished.

The selection was derived with materials from the data of the glove manufacturers.

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 can not be calculated in advance and has therefore to be checked prior to the application.

· **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.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **General Information**

Form: Fluid
Colour: Yellow

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Odour:	Characteristic
· Change in condition Boiling point/Boiling range:	> 100°C
· Flash point:	Not applicable.
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Vapour pressure at 20°C:	23.0 hPa
· Density at 20°C:	1.30 g/cm ³
· Solubility in / Miscibility with water:	Fully miscible.
· pH-value (100 g/l) at 20°C:	1
· Solvent content:	
Organic solvents:	4.3 %
VOC (EC)	4.28 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** >300°C
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous decomposition products:**
Chlorine
Hydrogen chloride (HCl)

11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

7646-85-7 zinc chloride

Oral | LD50 | 350 mg/kg (rat)

12125-02-9 ammonium chloride

Oral | LD50 | 1650 mg/kg (rat)

7647-01-0 hydrogen chloride

Oral | LD50 | 900 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Corrosive

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish

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· **General notes:**

- *Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water*
- *Do not allow product to reach ground water, water course or sewage system.*
- *Must not reach sewage water or drainage ditch undiluted or unneutralized.*
- *Danger to drinking water if even small quantities leak into the ground.*
- *Also poisonous for fish and plankton in water bodies.*
- *Very toxic for aquatic organisms*

13 Disposal considerations

· **Product:**

· **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
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· **Uncleaned packaging:**

· **Recommendation:** Disposal must be made according to official regulations.

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

14 Transport information

· **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 8 Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 1840
- **Packaging group:** III
- **Hazard label:** 8
- **Description of goods:** 1840 ZINC CHLORIDE SOLUTION

· **Maritime transport IMDG:**



- **IMDG Class:** 8
- **UN Number:** 1840
- **Label:** 8
- **Packaging group:** III
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Proper shipping name:** ZINC CHLORIDE SOLUTION

· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1840
- **Label:** 8
- **Packaging group:** III

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Proper shipping name: ZINC CHLORIDE SOLUTION

15 Regulatory information

· Labelling according to EU guidelines:

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· Code letter and hazard designation of product:

C Corrosive
N Dangerous for the environment

· Hazard-determining components of labelling:

zinc chloride

· Risk phrases:

34 Causes burns.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Safety phrases:

1/2 Keep locked up and out of the reach of children.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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.

· Relevant R-phrases

22 Harmful if swallowed.
34 Causes burns.
36 Irritating to eyes.
37 Irritating to respiratory system.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· Department issuing MSDS: Department of laboratory

· Contact: Mrs. Koch