

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

Printing date 23.05.2024

Version number 6

Revision: 22.05.2024

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

**1.1 Product identifier**

**Trade name:** Aluminiumweichlötfussmittel ZnAl  
**UFI:** TJ39-V0C1-P004-SG15



**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](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-hour emergency information:*

*Giftnotruf Berlin, counselling in German and English*

*Phone: (030) 30686 700*

*Tel: +49 208 8503529*

**EuPCs:** PC-TEC-24

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

**STOT RE 1** H372 Causes damage to organs through prolonged or repeated exposure.



GHS05 corrosion

**Eye Dam. 1** H318 Causes serious eye damage.



GHS07

**Acute Tox. 4** H332 Harmful if inhaled.

**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



GHS08

**Signal word** Danger

**Hazard-determining components of labelling:**

*Caesiumaluminiumfluorid*

*2,2'-oxybisethanol*

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**Hazard statements**

H332 Harmful if inhaled.  
H318 Causes serious eye damage.  
H372 Causes damage to organs through prolonged or repeated exposure.  
H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P280 Wear eye protection / face protection.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312 Call a POISON CENTER/doctor if you feel unwell.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Additional information:**

Restricted to professional users.

**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.

<b>Dangerous components:</b>		
CAS: 138577-01-2 ELINCS: 434-690-3 Reg.nr.: 01-0000018082-78	Caesiumaluminiumfluorid ◆ STOT RE 1, H372; ◆ Eye Dam. 1, H318; ◆ Acute Tox. 4, H332; Aquatic Chronic 3, H412	30-80%
CAS: 111-46-6 EINECS: 203-872-2 Index number: 603-140-00-6 Reg.nr.: 01-2119457857-21	2,2'-oxybisethanol ◆ STOT RE 2, H373; ◆ Acute Tox. 4, H302	<25%
CAS: 25265-71-8 EINECS: 246-770-3 Reg.nr.: 01-2119456811-38	Dipropylene glycol (isomer unspecified) substance with a Community workplace exposure limit	<50%

**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.**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Rub in Ca-gluconate solution or Ca-gluconate gel immediately.

If skin irritation continues, consult a doctor.

**After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.**After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help 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**

Medical supervision for at least 48 hours.

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.**For safety reasons unsuitable extinguishing agents:** Water with full jet**5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

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**Hydrogen fluoride (HF)****5.3 Advice for firefighters****Protective equipment:***Do not inhale explosion gases or combustion gases.**Wear self-contained respiratory protective device.**Additional information Collect contaminated fire fighting water separately. It must not enter the sewage system.***SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures***Ensure adequate ventilation**Wear protective equipment. Keep unprotected persons away.**Avoid formation of dust.***6.2 Environmental precautions:***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.**Do not allow to enter sewers/ surface or ground water.***6.3 Methods and material for containment and cleaning up:***Pick up mechanically.**Send for recovery or disposal in suitable receptacles.**Dispose contaminated material as waste according to section 13.***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***Use only in well ventilated areas.**Prevent formation of dust.***Information about fire - and explosion protection:** *The product is not flammable.***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:***Do not store together with acids.**Store away from foodstuffs.***Further information about storage conditions:***Keep container tightly sealed.**Store in dry conditions.**Protect from humidity and water.***Storage class:** 6.1 C**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:****25265-71-8 Dipropylene glycol (isomer unspecified)**

AGW (Germany)	Long-term value: 100 E mg/m <sup>3</sup> 2(II);DFG, Y, 11
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**111-46-6 2,2'-oxybisethanol**

AGW (Germany)	Long-term value: 44 mg/m <sup>3</sup> , 10 ppm 4(II);DFG, Y, 11
WEL (Great Britain)	Long-term value: 101 mg/m <sup>3</sup> , 23 ppm
OEL (Ireland)	Long-term value: 100 mg/m <sup>3</sup> , 23 ppm

**Regulatory information****AGW (Germany):** TRGS 900**WEL (Great Britain):** EH40/2020**OEL (Ireland):** 2020 CoP for the Safety, Health and Welfare at Work

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**recommended monitoring procedures in accordance with 2020/878/EU no. 8.1.2:**  
 111-46-6 2,2-oxybisethanol: NIOSH 5523(E) "Glycols"

**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:

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.

**Respiratory protection:** Filter P3

#### 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  $\leq 6$

#### 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:	Whitish
Odour:	Characteristic
Odour threshold:	Not determined.
Boiling point or initial boiling point and boiling range	Undetermined.
Flammability	Not determined.
Lower and upper explosion limit	
Lower:	0.7 Vol %
Upper:	22.0 Vol %
Flash point:	> 120 °C
Auto-ignition temperature:	225 °C
Decomposition temperature:	Not determined.
pH	Not applicable.
Viscosity:	
Kinematic viscosity	Not applicable.
Dynamic:	Not applicable.
Solubility	
water:	Partly miscible.
Partition coefficient n-octanol/water (log value)	Not determined.
Vapour pressure:	Not applicable.

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**Density and/or relative density**

Density at 20 °C:

3.1 g/cm<sup>3</sup>**Relative density**

Not determined.

**Vapour density**

Not applicable.

**Particle characteristics**

See section 3.

**9.2 Other information****Appearance:****Form:***Solid***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.***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:** *No decomposition if used according to specifications.***10.3 Possibility of hazardous reactions** *Contact with water releases toxic gases.***10.4 Conditions to avoid** *Reaction with acids.***10.5 Incompatible materials:** *Acids.***10.6 Hazardous decomposition products:** *Hydrogen fluoride***SECTION 11: Toxicological information****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity***Harmful if inhaled.***LD/LC50 values relevant for classification:****ATE (Acute Toxicity Estimates)***Inhalative | LC50/4 h | 3 mg/l***Skin corrosion/irritation** *Based on available data, the classification criteria are not met.***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.*

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**STOT-single exposure** Based on available data, the classification criteria are not met.**STOT-repeated exposure**

Causes damage to organs through prolonged or repeated exposure.

**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:** Harmful to fish**Additional ecological information:****General notes:**

Harmful to aquatic organisms

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**

16 05 06\*: laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

HP 4: Irritant - skin irritation and eye damage

HP 5: Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP 14: Ecotoxic

cleaned plastic can:

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:** Alcohol**SECTION 14: Transport information****14.1 UN number or ID number**

ADR, ADN, IMDG, IATA

Void

**14.2 UN proper shipping name**

ADR, ADN, IMDG, IATA

Void

**14.3 Transport hazard class(es)**

ADR, ADN, IMDG, IATA

Class

Void

**14.4 Packing group**

ADR, IMDG, IATA

Void

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**14.5 Environmental hazards:**

Marine pollutant:	No
14.6 Special precautions for user	Not applicable.
14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
UN "Model Regulation":	Void

**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.***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.*

**Reasons for changes:**

04/24/2016: adaptations to Regulation 453/2010/EC, 830/2015/EU, 2012/18/EU

Section 2 Classification and labelling

10/27/2016: Section 3 Adjustment classification and labelling

07/17/2018: Section 1, 3

06/28/2021: Section 1, 3, 15, 16

05/22/2024: Section 2

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

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H332 Harmful if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

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

H412 Harmful to aquatic life with long lasting effects.

**Contact:** Dr. M. Probst**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)

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*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. 4: Acute toxicity – Category 4*

*Eye Dam. 1: Serious eye damage/eye irritation – Category 1*

*STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1*

*STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2*

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

**Safety data sheet SD3291**

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