

Safety data sheet according to 1907/2006/EC, Article 31

Version number: 16 Revision: 14.07.2015 Printing date: 14.07.2015

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

. 1.1 Product identifier

. Trade name: UNIGEL 502/01/05, 502/01/05/1

. 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:

PERKEO-WERK GMBH+CO.KG

Talweg 5

D-71701 Schwieberdingen

tel. +49 7150 - 350430

fax. +49 7150 - 3504340

e mail: perkeo@perkeo-werk.de

. Further information obtainable from: PERKEO-WERK GMBH+CO.KG

. 1.4 Emergency telephone number: +49 30 1 92 40

* 2 Hazards identification

. 2.1 Classification of the substance or mixture

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

Acute Tox. 4 H302 Harmful if swallowed.

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

Eye Dam. 1 H318 Causes serious eye damage.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic 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

GHS09

. Signal word Danger

. Hazard-determining components of labelling:

zinc chloride

ammonium chloride

ethanediol

glycerol

. Hazard statements

H302 Harmful if swallowed.

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

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.

P501 Dispose of contents/container in accordance with national regulations.

- . **2.3 Other hazards**
- . **Results of PBT and vPvB assessment**
- . **PBT:** Not applicable.
- . **vPvB:** Not applicable.

3 Composition/information on ingredients

. 3.2 Mixtures

. **Description:** Soldering flux

. **Dangerous components:**

CAS: 7646-85-7	zinc chloride	25-50%
EINECS: 231-592-0	Skin Corr. 1B, H314; Aquatic Acute 1,	
Reg.nr.: 01-2119472431-44	H400; Aquatic Chronic 1, H410; Acute Tox. 4,	
	H302; STOT SE 3, H335	

CAS: 12125-02-9	ammonium chloride	10-25%
EINECS: 235-186-4	Acute Tox. 4, H302; Eye Irrit. 2, H319	
Reg.nr.: 01-2119487950-27		

CAS: 107-21-1	ethandiol	10-25%
EINECS: 203-473-3	Acute Tox. 4, H302	
Reg.nr.: 01-2119456816-28		

CAS: 56-81-5	glycerol	< 2,5%
EINECS: 200-289-5	Acute Tox. 3, H301	

. **Additional information:**

For the wording of the listed risk phrases refer to section 16.

4 First aid measures

. 4.1 Description of first aid measures

. **General information:**

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:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

Call a doctor immediately.

. **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.

Rinse out mouth and then drink plenty of water.

. **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.

5 Firefighting measures

. 5.1 Extinguishing media

. **Suitable extinguishing agents:**

Use fire extinguishing methods suitable to surrounding conditions.

. **5.2 Special hazards arising from the substance or mixture**

No further relevant information available.

. **5.3 Advice for firefighters**

. **Protective equipment:** No special measures required.

6 Accidental release measures

. 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

. 6.2 Environmental precautions:

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.

. 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.

7 Handling and storage

. 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

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

. 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: Not required.

. Further information about storage conditions: Keep receptacle tightly sealed.

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

8 Exposure controls/personal protection

. Additional information about design of technical facilities:

No further data; see item 7.

. 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

107-21-1 ethanediol

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

56-81-5 glycerol

WEL (Great Britain)	Long-term value: 10 mg/m ³
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. Additional information: The lists valid during the making were used as basis.

. 8.2 Exposure controls

. 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.

Do not inhale gases / fumes / aerosols.

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. Suitable respiratory protective device recommended.

. Protection of hands:



Protective gloves

PVC or PE gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

. Material of gloves

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. Not required.

. 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.

. For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:

PVC or PE gloves

. For the permanent contact gloves made of the following materials are suitable:

Nitrile rubber, NBR

PVC or PE gloves

Neoprene gloves

. For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

PVC or PE gloves

. As protection from splashes gloves made of the following materials are suitable:

PVC or PE gloves

. Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

. 9.1 Information on basic physical and chemical properties

. General Information

. Appearance:

Form:

Fluid

Colour:

According to product specification

. Odour: C

haracteristic

. Odour threshold:

Not determined.

. pH-value at 20 °C:

3

. Change in condition

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

100 °C

. Flash point:

> 100 °C

. Flammability (solid, gaseous):

Not applicable.

. Ignition temperature:

410 °C

. Decomposition temperature:

Not determined.

. Self-igniting:

Product is not selfigniting.

. Danger of explosion:

Product does not present an explosion hazard.

- . **Explosion limits:**
 - Lower: 3,2 Vol %
 - Upper: 53,0 Vol %
- . Vapour pressure at 20 °C: 23 hPa
- . Density at 20 °C: 1,44 g/cm³
- . Relative density: Not determined.
- . Vapour density: Not determined.
- . Evaporation rate: Not determined.
- . Solubility in / Miscibility with water: Fully miscible.
- . Partition coefficient (n-octanol/water): Not determined.
- . Viscosity:
 - Dynamic at 20 °C: 200 mPas
 - Kinematic: Not determined.
 - Water: 33,8 %
- . Solids content: 51,6 %
- . **9.2 Other information** No further relevant information available.

10 Stability and reactivity

- . 10.1 Reactivity
- . 10.2 Chemical stability
- . **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- . 10.3 Possibility of hazardous reactions Corrosive action on metals.
- . 10.4 Conditions to avoid No further relevant information available.
- . 10.5 Incompatible materials: No further relevant information available.
- . 10.6 Hazardous decomposition products:
Danger of forming toxic pyrolysis products.

11 Toxicological information

- . 11.1 Information on toxicological effects
- . Acute toxicity:
- . LD/LC50 values relevant for classification:
7646-85-7 zinc chloride
Oral LD50 350 mg/kg (rat)
- . Primary irritant effect:
 - . on the skin: Caustic effect on skin and mucous membranes.
 - . on the eye: Strong caustic effect.
- . Sensitisation: No sensitising 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:

Harmful

Corrosive

Irritant

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

- . 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.
- . Ecotoxicological effects:
- . Remark: Very toxic for fish
- . Additional ecological information:
- . General notes:

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.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Water danger class 3 (German Regulation) (Self-assessment): extremely hazardous for water

12.5 Results of PBT and vPvB assessment

. **PBT:** Not applicable.

. **vPvB:** Not applicable.

. **12.6 Other adverse effects** No further relevant information available.

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

. Uncleaned packaging:

. Recommendation:

Disposal must be made according to official regulations.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

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

14 Transport information

14.1 UN-Number

. ADR,ADN, IMDG, IATA

UN1760

14.2 UN proper shipping name

. ADR/ADN

1760 CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE), ENVIRONMENTALLY HAZARDOUS CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE), MARINE POLLUTANT CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE)

. IMDG

. IATA

14.3 Transport hazard class(es)

. ADR/ADN



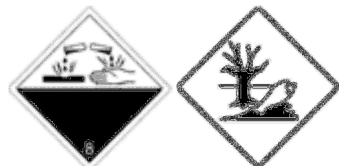
. Class

8 (C9) Corrosive substances.

. Label

8

. IMDG



. Class

8 Corrosive substances.

. Label

8

. IATA



. Class

8 Corrosive substances.

. Label

8

. 14.4 Packing group	III
. ADR,ADN, IMDG, IATA	Product contains environmentally hazardous substances: zinc chloride
. 14.5 Environmental hazards:	Yes
. Marine pollutant:	Symbol (fish and tree)
. Special marking (ADR/ADN):	Symbol (fish and tree)
. 14.6 Special precautions for user	Warning: Corrosive substances.
. Danger code (Kemler):	80
. EMS Number:	F-A,S-B
. Segregation groups	Acids
. 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
. Transport/Additional information:	
. ADR/ADN	
. 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
. Remarks:	Under certain conditions substances in Class 3 (flammable liquids) can be classified in packinggroup III. See IMDG, Part 2, Chapter 2.3, Paragraph 2.3.2.2
. UN "Model Regulation":	UN1760, CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE), ENVIRONMENTALLY HAZARDOUS, 8, III

* 15 Regulatory information

. 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

. 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

ammonium chloride

ethanediol

glycerol

. Hazard statements

H302

Harmful if swallowed.

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

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/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.
P501	Dispose of contents/container in accordance with national regulations.

. 15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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 phrases

H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

. Department issuing MSDS: PERKEO-WERK GMBH+CO.KG

. Contact: Mr. Cada

. Abbreviations and acronyms:

Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

. * Data compared to the previous version altered.