

**Safety data sheet**

according to 1907/2006/EC, Article 31

Printing date 28.01.2016

Version number 24

Revision: 28.01.2016

**1 Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name:** GRIFFON S-39 UNIVERSAL BOT 80ML\*16 ENDE**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:**

Bison International  
Dr.A.F.Philipsstraat 9  
NL-4462 EW Goes  
PO Box 160  
NL-4460 AD Goes  
tel. +31 88 3235700  
fax. +31 88 3235800  
e mail: sds@boltonadhesives.com

**Further information obtainable from:** Bison QESH**1.4 Emergency telephone number:** +31 88 3235700**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

**Hazard statements**

H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.

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H410 Very toxic to aquatic life with long lasting effects.

### . Precautionary statements

- P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P271 Use only outdoors or in a well-ventilated area.  
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, H400;  |         |
| Reg.nr.: 01-2119472431-44 | ⚠ 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             | ethanediol                                       | 2,5-10% |
| EINECS: 203-473-3         | ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302          |         |
| Reg.nr.: 01-2119456816-28 |  |         |
| CAS: 56-81-5              | glycerol   | ≤ 2,5%  |
| EINECS: 200-289-5         | substance with a Community workplace exposure    |         |
| Reg.nr.: 01-2119471987-18 | limit  |         |

### . Additional information:

For the wording of the listed hazard 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.

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- Call a doctor immediately.
- . **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
Immediately rinse with water.
- . **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:**  
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.

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**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:****56-81-5 glycerol**WEL Long-term value: 10 mg/m<sup>3</sup>**. 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.

Store protective clothing separately.

Avoid contact with the eyes and skin.

**. Respiratory protection:**

Suitable respiratory protective device recommended.

Use suitable respiratory protective device in case of insufficient ventilation.

**. Recommended filter device for short term use:** Filter A**. 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

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

PVC or PE gloves

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**. 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:**

Characteristic

**. 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:**

&gt; 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/cm<sup>3</sup>**. 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:**

35.4 %

**Solids content:**

51.6 %

**. 9.2 Other information**

No further relevant information available.

**10 Stability and reactivity****. 10.1 Reactivity** No further relevant information available.

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- . **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**  
Harmful if swallowed.
- . **LD/LC50 values relevant for classification:**  
**7646-85-7 zinc chloride**  
Oral LD50 350 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.
- . **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- . **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.

### \* 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.
- . **Additional ecological information:**
- . **General notes:**  
Water danger 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.
- . **12.5 Results of PBT and vPvB assessment**
- . **PBT:** Not applicable.
- . **vPvB:** Not applicable.

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- . **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
- . **IMDG**
- . **IATA** Corrosive liquids, n.o.s. (Zinc chloride)
- . **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

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- . 14.4 Packing group III
- . ADR,ADN, IMDG, IATA
- . 14.5 Environmental hazards: Product contains environmentally hazardous substances: zinc chloride
- . Marine pollutant: Yes  
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
- . Stowage Category A
- . Stowage Code SW2 Clear of living quarters.
- . 14.7 Transport in bulk according to Annex II of Marpol 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": UN 1760 CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE), 8, III, ENVIRONMENTALLY HAZARDOUS

**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

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- . **Signal word** Danger
- . **Hazard-determining components of labelling:**
  - zinc chloride
  - ammonium chloride
  - ethanediol
- . **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**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P271 Use only outdoors or in a well-ventilated area.
  - 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.
- . **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
- . **National regulations:**
- . **Additional classification according to Decree on Hazardous Materials, Annex II:** Carcinogenic hazardous material group III (dangerous).
- . **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
- . **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**
  - H302 Harmful if swallowed.
  - H314 Causes severe skin burns and eye damage.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - 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.

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**. Abbreviations and acronyms:**

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  
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2  
Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1  
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

**. \* Data compared to the previous version altered.**

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

. **1.1 Product identifier**

. **Trade name:** GRIFFON S-39 UNIVERSAL BOT 80ML\*16 ENDE

. **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:**

Bison International  
Dr.A.F.Philipsstraat 9  
NL-4462 EW Goes  
PO Box 160  
NL-4460 AD Goes  
tel. +31 88 3235700  
fax. +31 88 3235800  
e mail: sds@boltonadhesives.com

. **Further information obtainable from:** BISON QESH

. **1.4 Emergency telephone number:** +31 88 3235700

\* **2 Hazards identification**

. **2.1 Classification of the substance or mixture**

. **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Not applicable.

C; Corrosive

R34: Causes burns.

Xn; Harmful

R22: Harmful if swallowed.

Xi; Irritant

R37: Irritating to respiratory system.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects  
in the aquatic 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.

. **Classification system:**

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

. **2.2 Label elements**

. **Labelling according to EU guidelines:**

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

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**Code letter and hazard designation of product:**

C Corrosive  
N Dangerous for the environment

**Hazard-determining components of labelling:**

zinc chloride

**Risk phrases:**

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







**Safety phrases:**

- 23 Do not breathe vapour.
- 25 Avoid contact with eyes.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 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).
- 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

**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	 C R34;  Xn R22;  N R50/53	
Reg.nr.: 01-2119472431-44		
CAS: 12125-02-9	ammonium chloride	10-25%
EINECS: 235-186-4	 Xn R22;  Xi R36	
Reg.nr.: 01-2119487950-27		
CAS: 107-21-1	ethanediol	2,5-10%
EINECS: 203-473-3	 Xn R22	
Reg.nr.: 01-2119456816-28		
CAS: 56-81-5	glycerol	≤ 2,5%
EINECS: 200-289-5	substance with a Community workplace exposure	
Reg.nr.: 01-2119471987-18	limit	

**Additional information:**

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

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**Trade name:** GRIFFON S-39 UNIVERSAL BOT 80ML\*16 ENDE

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\* **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.

Immediately rinse with water.

. **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:**

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.

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**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:**  
**56-81-5 glycerol**  
WEL (Great Britain) Long-term value: 10 mg/m<sup>3</sup>
- . **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.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.
- . **Respiratory protection:**  
Suitable respiratory protective device recommended.  
Use suitable respiratory protective device in case of insufficient ventilation.
- . **Recommended filter device for short term use:** Filter A
- . **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.

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- . **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
- . **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:** Characteristic
- . **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/cm<sup>3</sup>
- . **Relative density** Not determined.
- . **Vapour density** Not determined.
- . **Evaporation rate** Not determined.
- . **Solubility in / Miscibility with water:** Fully miscible.

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- . **Partition coefficient (n-octanol/water):** Not determined.
- . **Viscosity:**
  - Dynamic at 20 °C:** 200 mPas
  - Kinematic:** Not determined.
  - Water:** 35.4 %
  - Solids content:** 51.6 %
- . **9.2 Other information** No further relevant information available.

### 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** 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:**
  - . **Skin corrosion/irritation** Caustic effect on skin and mucous membranes.
  - . **Serious eye damage/irritation**  
Strong caustic effect.  
Strong irritant with the danger of severe eye injury.
  - . **Respiratory or skin 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.

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- . **Additional ecological information:**
- . **General notes:**  
Water danger 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.
- . **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
- . **IMDG** CORROSIVE LIQUID, N.O.S. (ZINC CHLORIDE), MARINE POLLUTANT
- . **IATA** Corrosive liquids, n.o.s. (Zinc chloride)
- . **14.3 Transport hazard class(es)**
- . **ADR/ADN**



- . **Class** 8 (C9) Corrosive substances.
- . **Label** 8

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**IMDG**

- . **Class** 8 Corrosive substances.

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. Label	8
-----	
. IATA	
	
. Class	8 Corrosive substances.
. Label	8
. 14.4 Packing group	
. ADR,ADN, IMDG, IATA	III
. 14.5 Environmental hazards:	Product contains environmentally hazardous substances: zinc chloride
. Marine pollutant:	Yes 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
. Stowage Category	A
. Stowage Code	SW2 Clear of living quarters.
. 14.7 Transport in bulk according to Annex II of Marpol 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

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### \* 15 Regulatory information

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

- . 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:

22 Harmful if swallowed.

34 Causes burns.

37 Irritating to respiratory system.

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

- . Safety phrases:

23 Do not breathe vapour.

25 Avoid contact with eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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).

61 Avoid release to the environment. Refer to special instructions/safety data sheets.

- . 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

- . National regulations:

- . Additional classification according to Decree on Hazardous Materials, Annex II: Carcinogenic hazardous material group III (dangerous).

- . Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- . 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.

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. **Relevant phrases**

R22 Harmful if swallowed.

R34 Causes burns.

R36 Irritating to eyes.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

. **\* Data compared to the previous version altered.**

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