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

1.1. Product identifier

Trade name: Lötöl

Contains zinc chloride, ammonium chloride in aqueous solution.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Flux, Industrial use

1.3. Details of the supplier of the safety data sheet

Manufacturer: Lötmittel Techno Service GmbH & Co. KG Phone: 00 43 – 77 51 – 2 00 61

Address: Kammer 28, A-4974 Ort im Innkreis FAX: 00 43 – 77 51 – 2 00 58

email: office@lts-service.info

1.4. Emergency telephone number

Austria: 01 - 406 43 43

Denmark: 82 12 12 12

Finland: 09 - 47 19 77

France: 02 - 41 48 21 21

Germany: 030 - 19 240

Hungary: (06-80) 201 - 199

Italy: 02 66 10 10 29

Netherlands: 030 - 27 48 888

Poland: 058 - 682 04 04

Portugal: 808 250 143

Spain: 091 - 562 04 20

Switzerland: 145

Turkey: 0312 - 311 89 40

United Kingdom: 111

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Signal word: Danger

Hazard classes and Hazard categories: Acute Tox. 4 Skin Corr. 1B STOT SE 3
Aquatic Acute 1 Aquatic Chronic 1

Hazard pictograms: GHS05, Corrosion GHS07, Exclamation mark GHS09, Dangerous for the environment

Hazard Statements: H302 H314 H335 H400 H410

2.2. Label elements

Signal word: Danger

Hazard pictograms: GHS05, Corrosion GHS07, Exclamation mark GHS09, Dangerous for the environment



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

P270 Do not eat, drink or smoke when using this product.

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

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash hands thoroughly after handling.

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

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P310 Immediately call a POISON CENTER/doctor.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P391 Collect spillage.

P273 Avoid release to the environment.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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P405 Store locked up.
P501.1 Dispose of contents/container to industrial incineration plant.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

3.2. Mixtures

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

Substance name	CAS No.	EC No.	Concentration	Hazard Statements and Pictograms
zinc chloride registration number: 01-2119472431-44-0001	7646-85-7	231-592-0	> 25 - 70 %	Acute Tox. 4 GHS07 H302 Skin Corr. 1B GHS05 H314 STOT SE 3 GHS07 H335 Aquatic Acute 1 GHS09 H400 Aquatic Chronic 1 GHS09 H410
ammonium chloride registration number: 01-2119489385-24-0000	12125-02-9	235-186-4	< 15 %	Acute Tox. 4 GHS07 H302 Eye Irrit. 2 GHS07 H319

Additional information

Full text of H- and EUH-phrases: see section 2 and 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Following inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
Following skin contact	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. If skin irritation or rash occurs: Get medical advice/attention.
Following eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Following ingestion	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms may occur many hours after contact, because of this medical observation at least 48 hours after accident.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor: Corrosive. Treat symptomatically. No specific antidote.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media

Product itself does not burn.

Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Corrosion of unprecious metals.

Heating up till decomposition forms hydrogen chloride and zinc oxide.

5.3. Advice for firefighters

Use water spray for cooling containers.

Do not inhale explosion and combustion gases.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Use personal protection equipment. Remove persons to safety.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Collect in closed and suitable containers for disposal.

Dispose of contents/container to in accordance with local/regional/national/international regulation.

Wash with plenty of water. Clean contaminated objects and areas thoroughly observing environmental regulations. Ensure waste is collected and contained. Ventilate affected area.

6.4. Reference to other sections

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Provide adequate ventilation.

If handled uncovered, arrangements with local exhaust ventilation should be used if possible.

The product develops hydrogen in contact with metals.

The product develops chlorine in contact with oxidising agents.

Exothermic reaction with Alkali (lye).

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

Immediately remove any contaminated clothing, shoes or stockings.

Only fill soldering fluid in labelled reagent bottles, never use beverage bottles!

7.2. Conditions for safe storage, including any incompatibilities

No special fire protection measures are necessary.

Keep container tightly closed in a cool, well-ventilated place.

See section 10.

Storage class LGK8BL Non-combustible corrosive substances (liquid)

7.3. Specific end use(s)

The substance should only be used in industrial settings or professionally by skilled operators.

The substance must not be supplied to the general public.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limit value

When in normal use (heating above 100°C) observe:

Substance name	CAS No.	Long term occupational exposure limit value		Short term occupational exposure limit value	
		2ml/m ³	3mg/m ³	4ml/m ³	6mg/m ³
hydrogen chloride	7647-01-0				
Source: TRGS (Germany)					
hydrogen chloride	7647-01-0	5ml/m ³	8mg/m ³	10ml/m ³	15mg/m ³
Source: RL2000/39/EG GKV (Austria)					
ammonia	7664-41-7	20ml/m ³	14mg/m ³	40ml/m ³	28mg/m ³
Source: TRGS 900 (Germany)					
ammonia	7664-41-7	20ml/m ³	14mg/m ³	50ml/m ³	36mg/m ³
Source: RL2000/39/EG GKV (Austria)					

8.2. Exposure controls

Additional information on plant design: See Section 7.

Personal protective equipment: Wear appropriate safety clothing and eye/face protection.

Respiratory protection: Use appropriate respiratory protection.

Hand protection: Gloves with long cuffs

Suitable material: NBR (nitrile rubber)

The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Eye/face protection: Goggles

Skin protection, Body protection: Body covering clothes and boots

Protective measures

When using do not eat, drink, smoke, sniff. Wash hands before breaks and after work.

Immediately remove any contaminated clothing, shoes or stockings.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless to yellow-orange
Odour	odourless
Odour threshold	odourless
pH value in delivery state	< 4
Freezing point	< 0°C
Boiling temperature / boiling range	> 100°C
Flash point (°C)	Not flammable.
Vapourisation rate / Evaporation rate	not measured
Lower explosion limit (Vol-%)	not explosive.
Upper explosion limit (Vol-%)	not explosive.
Vapour pressure	not measured
Vapour density	not measured
Density at 20°C:	> 1,20 g/ml
Water solubility (g/l)	completely miscible
Partition coefficient n-octanol/water (log P O/W)	not measured. Product/Substance is inorganic.
Self ignition temperature in °C	No self-ignition.
Decomposition temperature (°C)	Decomposition takes place from temperatures above: approx. 180°C
Viscosity	not measured
Danger of explosion	not explosive. Not oxidising

9.2. Other information

VOC-value (in g/l): 0

SECTION 10: Stability and reactivity**10.1. Reactivity**

May be corrosive to metals (H290).

10.2. Chemical stability

The mixture is stable under anticipated conditions of temperature and pressure.

Decomposition takes place from temperatures above: approx. 180°C.

10.3. Possibility of hazardous reactions

No hazardous polymerisation.

10.4. Conditions to avoid

The product develops hydrogen in contact with metals.

10.5. Incompatible materials

The product develops chlorine in contact with oxidising agents. Exothermic reaction with: Alkali (lye).

10.6. Hazardous decomposition products

See section 8.

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

Acute toxicity	Acute Tox. 4
Mouse oral LD50 329 mg/kg (zinc chloride 100%)	
Rat oral LD50 1440 mg/kg (ammonium chloride 100%)	
Skin corrosion/Irritation	Skin Corr. 1B
Eye damage / irritation	corrosive
Sensitisation to the respiratory tract	no classification.
Skin sensitisation	no classification.
Germ cell mutagenicity	no classification.
Carcinogenicity	no classification.
Reproductive toxicity	no classification.
Specific target organ toxicity (single exposure)	STOT SE 3
Specific target organ toxicity (repeated exposure)	no classification.
Aspiration hazard	no classification.
Other information	No information available.

SECTION 12: Ecological information**12.1. Toxicity**

Fish 96 hours LC50: 38 mg/l (zinc chloride 100%).

Fish 96 hours LC50: 209 mg/l (ammonium chloride 100%).

Fish 96 hours LC50: 862 mg/l (hydrogen chloride 100%).

Daphnia magna (Big water flea) 48 hours EC50 0,33 mg/l (zinc chloride 100%).

Daphnia magna (Big water flea) 48 hours EC50 100 mg/l (ammonium chloride 100%).

12.2. Persistence and degradability

not persistent.

12.3. Bioaccumulative potential

Does not accumulate in organisms.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This mixture does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal: Dispose according to legislation. For recycling, contact manufacturer.

Packaging disposal: Dispose according to legislation. For recycling, contact manufacturer.

SECTION 14: Transport information

- 14.1. UN number UN1840
14.2. UN proper shipping name ZINC CHLORIDE, SOLUTION
14.3. Transport hazard class(es) 8
14.4. Packing group III
14.5. Environmental hazards yes
14.6. Special precautions for user no
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code: no
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SECTION 15: Regulatory information

- 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
Seveso III 2012/18/EU, Annex I, Part 1: follow quantity limits related classification.
REACH Candidate List: not listed
Water hazard class (WGK): strongly hazardous to water (WGK 3)
- 15.2. Chemical safety assessment
For this mixture a chemical safety assessment has not been carried out.
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SECTION 16: Other information

Amendments: complete revision
Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP] Article 9 (1).
Acute Tox. 4 Harmful if swallowed.
Skin Corr. 1B Skin corrosion
Skin Irrit. 2 Skin Irritation
Eye Dam. 1 Serious eye damage
Eye Irrit. 2 Eye irritation
Skin Sens. 1 May cause an allergic skin reaction.
STOT SE 3 May cause respiratory irritation.
Aquatic Acute 1 Very toxic to aquatic life.
Aquatic Chronic 1 Very toxic to aquatic life with long lasting effects.
Aquatic Chronic 2 Hazardous to the Aquatic Environment long-term category 2
Aquatic Chronic 3 Hazardous to the Aquatic Environment long-term category 3

Relevant H- and EUH-phrases (Number and full text)

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.	H317 May cause an allergic skin reaction.
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 if swallowed.	
H400 Very toxic to aquatic life.	
H410 Very toxic to aquatic life with long lasting effects.	
H411 Toxic to aquatic life with long lasting effects.	
H412 Harmful to aquatic life with long lasting effects.	

The data contained herein is based on information currently available to us and believed to be factual and the opinions expressed to be those of qualified experts; however this data is not to be taken as a warranty or representation for which Lötmittel Techno Service GmbH & Co. KG assumes legal responsibility.

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