Safety data sheet
according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Tin-plating Paste S-SN97CU3
1 kg Art.: 5490 5, Art.: 5494 5

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses of the substance or mixture:
Soft soldering paste
Uses advised against:
No information available at present.

1.3 Details of the supplier of the safety data sheet
Theo Förch GmbH & Co. KG
Theo-Förch-Str. 11 – 15
74196 Neuenstadt
Tel.: 07139/95-0
Fax: 07139/95-199
Email: info@foerch.de
Homepage: www.foerch.com

Details of the supplier of the safety data sheet see section 16 of this safety data sheet.

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number
Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:
+49 (0) 700 / 24 112 112 (TFC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Skin Corr.	1B	H314-Causes severe skin burns and eye damage.
STOT SE	3	H335-May cause respiratory irritation.
Eye Dam.	1	H318-Causes serious eye damage.
Aquatic Chronic	2	H411-Toxic to aquatic life with long lasting effects.

2.2 Label elements
Labeling according to Regulation (EC) 1272/2008 (CLP)

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II
Revision date / version: 01.11.2021 / 0014
Replacing version dated / version: 21.02.2020 / 0013
Valid from: 01.11.2021
PDF print date: 01.11.2021
Tin-plating Paste S-SN97CU3
1 kg Art.: 5490 5, Art.: 5494 5

Danger

H314-Causes severe skin burns and eye damage. H335-May cause respiratory irritation. H411-Toxic to aquatic life with long lasting effects.

P260-Do not breathe dust. P280-Wear protective gloves / protective clothing and 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 or 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.

Zinc chloride
Isotridecanol, ethoxylated
Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).
The mixture does not contain any substance with endocrine disrupting properties (< 0,1 %).

SECTION 3: Composition/information on ingredients

3.1 Substances

n.a.

3.2 Mixtures

Zinc chloride	
Registration number (REACH)	01-2119472431-44-XXXX
Index	030-003-00-2
EINECS, ELINCS, NLP, REACH-IT List-No.	231-592-0
CAS	7646-85-7
content %	5-10
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)
Specific Concentration Limits and ATE	STOT SE 3, H335: >=5 %

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	270-115-0
CAS	68411-30-3
content %	1-10
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 3, H412

Ammonium chloride	

Registration number (REACH)	---
Index	017-014-00-8
EINECS, ELINCS, NLP, REACH-IT List-No.	235-186-4
CAS	12125-02-9
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Eye Irrit. 2, H319

Isotridecanol, ethoxylated	
Registration number (REACH)	---
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	---
CAS	9043-30-5
content %	1-5
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	Acute Tox. 4, H302 Eye Dam. 1, H318

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!

Inhalation
Remove person from danger area.
Supply person with fresh air and consult doctor according to symptoms.
If the person is unconscious, place in a stable side position and consult a doctor.

Skin contact
Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Eye contact
Remove contact lenses.
Wash thoroughly for several minutes using copious water - call doctor immediately, have Data Sheet available.
Protect uninjured eye.
Follow-up examination by an ophthalmologist.

Ingestion
Rinse the mouth thoroughly with water.
Do not induce vomiting. Consult doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
CO2
Extinction powder
Water jet spray
Large fire:
Alcohol resistant foam
Water jet spray

Unsuitable extinguishing media
High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:
Oxides of carbon
Oxides of nitrogen
Hydrogen chloride
Ammonia
Toxic gases

5.3 Advice for firefighters

For personal protective equipment see Section 8.
In case of fire and/or explosion do not breathe fumes.
Protective respirator with independent air supply.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Ensure sufficient supply of air.
Avoid inhalation, and contact with eyes or skin.
If applicable, caution - risk of slipping.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent from entering drainage system.
Prevent surface and ground-water infiltration, as well as ground penetration.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Pick up mechanically and dispose of according to Section 13.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
If applicable, suction measures at the workstation or on the processing machine necessary.
Avoid contact with eyes or skin.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Not to be stored in gangways or stair wells.
Store product closed and only in original packing.
Do not store with alkalis.
Do not store with acids.
Do not store with oxidizing agents.
Observe special storage conditions.
Store in a dry place.

Protect from direct sunlight and warming.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

GB	Chemical Name	Zinc chloride	Content %:5-10
WEL-TWA: 1 mg/m3 (fume)	WEL-STEL: 2 mg/m3 (fume)	---	
Monitoring procedures:	---		
BMGV: ---	Other information: ---		

GB	Chemical Name	Ammonium chloride	Content %:1-5
WEL-TWA: 10 mg/m3 (fume)	WEL-STEL: 20 mg/m3 (fume)	---	
Monitoring procedures:	---		
BMGV: ---	Other information: ---		

GB	Chemical Name	Copper	Content %:
WEL-TWA: 1 mg/m3 (dusts and mists, as Cu)	WEL-STEL: 2 mg/m3 (dusts and mists, as Cu)	---	
Monitoring procedures:	ISO 15202 (Workplace air - Determination of metals and metalloids in airborne particulate matter by Inductively Coupled Plasma Atomic Emission Spectrometry), Part 1-3 - 2012(Part 1), 2012(Part 2), 2004 (Part 3) - EU project BC/CEN/ENTR/000/2002-16 card 84-1 (2004) - MDHS 91/2 (Metals and metalloids in workplace air by X-ray fluorescence spectrometry) - 2015 - EU project BC/CEN/ENTR/000/2002-16 card 84-2 (2004) - NIOSH 7029 (Copper (dust and fume)) - 1994 - NIOSH 7300 (ELEMENTS by ICP (Nitric/Perchloric Acid Ashing)) - 2003 - NIOSH 7301 (Elements by ICP (aqua regia ashing)) - 2003 - NIOSH 7303 (Elements by ICP (Hot block HCl/HNO3 digestion)) - 2003 - OSHA ID-121 (Metal and metalloid particulates in workplace atmospheres (Atomic absorption)) - 2002 - EU project BC/CEN/ENTR/000/2002-16 card 84-10 (2004) - OSHA ID-125G (Metal and metalloid particulates in workplace atmospheres (ICP)) - 2002 - OSHA ID-206 (ICP analysis of metal/metallloid particulates from solder operations) - 1991		
BMGV: ---	Other information: ---		

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	0,268	mg/l	
	Environment - marine		PNEC	0,0268	mg/l	
	Environment - water, sporadic (intermittent) release		PNEC	0,0167	mg/l	
	Environment - sewage treatment plant		PNEC	3,43	mg/l	
	Environment - sediment, freshwater		PNEC	8,1	mg/kg dw	
	Environment - sediment, marine		PNEC	8,1	mg/kg dw	
	Environment - soil		PNEC	35	mg/kg dw	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	3	mg/m3	
Consumer	Human - inhalation	Long term, local effects	DNEL	3	mg/m3	
Consumer	Human - dermal	Long term, systemic effects	DNEL	85	mg/kg bw/day	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,85	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	12	mg/m3	
Workers / employees	Human - inhalation	Long term, local effects	DNEL	12	mg/m3	

Workers / employees	Human - dermal	Long term, systemic effects	DNEL	170	mg/kg bw/day	

Ammonium chloride						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	0,25	mg/l	
	Environment - marine		PNEC	0,025	mg/l	
	Environment - periodic release		PNEC	0,43	mg/kg	
	Environment - sediment, freshwater		PNEC	0,9	mg/kg	
	Environment - sediment, marine		PNEC	0,09	mg/kg	
	Environment - soil		PNEC	50,7	mg/kg	
	Environment - sewage treatment plant		PNEC	13,1	mg/l	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	43,97	mg/m3	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	9,4	mg/m3	
Consumer	Human - dermal	Long term	DNEL	55,2	mg/kg	
Consumer	Human - oral	Long term, systemic effects	DNEL	55,2	mg/kg	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	128,9	mg/kg	

Copper						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	7,8	µg/l	
	Environment - marine		PNEC	5,2	µg/l	
	Environment - sewage treatment plant		PNEC	230	µg/l	
	Environment - sediment, freshwater		PNEC	87	mg/kg dw	
	Environment - sediment, marine		PNEC	676	mg/kg dw	
	Environment - soil		PNEC	65	mg/kg dw	
Workers / employees	Human - inhalation	Short term, systemic effects	DNEL	18,2	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	137	mg/kg bw/day	
Workers / employees	Human - dermal	Short term, systemic effects	DNEL	273	mg/kg bw/day	

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. EN 14042.
EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles with side protection (EN 166).
If applicable
Face protection (EN 166).

Skin protection - Hand protection:
Chemical resistant protective gloves (EN ISO 374).
Recommended
Protective gloves in butyl rubber (EN ISO 374).
Permeation time (penetration time) in minutes:
480
Minimum layer thickness in mm:
0,7
The breakthrough times determined in accordance with EN 16523-1 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
Normally not necessary.
If OES or MEL is exceeded.
Filter B (EN 14387), code colour grey
Filter P1 (EN 143), code colour white
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
If applicable, these are included in the individual protective measures (eye/face protection, skin protection, respiratory protection).

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Pastelike, Solid
Colour:	Light grey
Odour:	Characteristic
Melting point/freezing point:	230-310 °C

Boiling point or initial boiling point and boiling range:	100 °C
Flammability:	There is no information available on this parameter.
Lower explosion limit:	Does not apply to solids.
Upper explosion limit:	Does not apply to solids.
Flash point:	Does not apply to solids.
Auto-ignition temperature:	No
Decomposition temperature:	There is no information available on this parameter.
pH:	5-6
Kinematic viscosity:	There is no information available on this parameter.
Solubility:	Insoluble
Partition coefficient n-octanol/water (log value):	Does not apply to mixtures.
Vapour pressure:	23 hPa (20°C)
Density and/or relative density:	There is no information available on this parameter.
Relative vapour density:	There is no information available on this parameter.
Particle characteristics:	There is no information available on this parameter.

9.2 Other information

Explosives:	Product is not explosive.
Oxidizing solids:	No

SECTION 10: Stability and reactivity

10.1 Reactivity
The product has not been tested.

10.2 Chemical stability
Stable with proper storage and handling.

10.3 Possibility of hazardous reactions
No dangerous reactions are known.

10.4 Conditions to avoid
See also section 7.
Strong heat

10.5 Incompatible materials
See also section 7.
Avoid contact with strong alkalis.
Avoid contact with strong acids.
Avoid contact with strong oxidizing agents.

10.6 Hazardous decomposition products
See also section 5.2
Ammonia
Hydrogen chloride

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Possibly more information on health effects, see Section 2.1 (classification).

Tin-plating Paste S-SN97CU3
1 kg Art.: 5490 5, Art.: 5494 5

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.

Symptoms:						n.d.a.

Zinc chloride						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	1100	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Skin corrosion/irritation:						Skin Corr. 1B
Serious eye damage/irritation:						Eye Dam. 1
Respiratory or skin sensitisation:						Not sensitizising
Symptoms:						asthmatic symptoms, breathing difficulties, burning of the membranes of the nose and throat, clouded vision, skin afflictions, pain in the mouth and throat

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	1080	mg/kg	Rat	OECD 401 (Acute Oral Toxicity)	
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Dam. 1
Respiratory or skin sensitisation:				Guinea pig	OECD 406 (Skin Sensitisation)	No (skin contact)

Ammonium chloride						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	1410	mg/kg	Rat		
Skin corrosion/irritation:				Rabbit	(Draize-Test)	Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Eye Irrit. 2
Respiratory or skin sensitisation:				Guinea pig		Not sensitizising
Germ cell mutagenicity:					OECD 471 (Bacterial Reverse Mutation Test)	Negative
Carcinogenicity:						Negative
Reproductive toxicity:						Negative

Symptoms:						respiratory distress, drowsiness, drop in blood pressure, diarrhoea, coughing, headaches, cramps, circulatory collapse, gastrointestinal disturbances, mucous membrane irritation, dizziness, nausea and vomiting., mental confusion

Isotridecanol, ethoxylated						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:	LD50	500	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>2000	mg/kg	Rat	OECD 402 (Acute Dermal Toxicity)	
Skin corrosion/irritation:				Rabbit		Not irritant
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Intensively irritant
Respiratory or skin sensitisation:				Guinea pig		No (skin contact), References
Germ cell mutagenicity:					(Ames-Test)	Negative, References

Copper						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Skin corrosion/irritation:						Not irritant
Serious eye damage/irritation:						Not irritant
Respiratory or skin sensitisation:						Not sensitizising
Symptoms:						abdominal pain, vomiting, weight loss, headaches, metal fume fever

11.2. Information on other hazards

Tin-plating Paste S-SN97CU3 1 kg Art.: 5490 5, Art.: 5494 5						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Endocrine disrupting properties:						Does not apply to mixtures.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

Tin-plating Paste S-SN97CU3
1 kg Art.: 5490 5, Art.: 5494 5

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Endocrine disrupting properties:							Does not apply to mixtures.
12.7. Other adverse effects:							No information available on other adverse effects on the environment.
Other information:	AOX						According to the recipe, contains no AOX.
Other information:	DOC						DOC-elimination degree(complexing organic substance)>= 80%/28d: n.a.

Zinc chloride

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	38	mg/l	Brachydanio rerio	IUCLID Chem. Data Sheet (ESIS)	
12.1. Toxicity to fish:	LC50	96h	3,36	mg/l	Brachydanio rerio		Analogous conclusion
12.1. Toxicity to daphnia:	EC50	48h	1,24	mg/l	Daphnia magna		Analogous conclusion
12.1. Toxicity to algae:	IC50	96h	0,05	mg/l	Pseudokirchneriella subcapitata		Analogous conclusion
12.5. Results of PBT and vPvB assessment							n.a.
Water solubility:			~4320	g/l			20°C

Benzenesulfonic acid, C10-13-alkyl derivs., sodium salts

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	2,88	mg/l	Pimephales promelas	OECD 203 (Fish, Acute Toxicity Test)	
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
12.1. Toxicity to fish:	NOEC/NOEL	72h	0,23	mg/l	Oncorhynchus mykiss	OECD 210 (Fish, Early-Life Stage Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	2,9	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	10-100	mg/l	Scenedesmus subspicatus		
12.2. Persistence and degradability:		30d	85	%	activated sludge	OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	Readily biodegradable

Ammonium chloride

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	725	mg/l	Lepomis macrochirus		
12.1. Toxicity to fish:	LC50	96h	209	mg/l	Cyprinus caprio		References
12.1. Toxicity to daphnia:	EC50	48h	>100	mg/l	Daphnia magna		References
12.5. Results of PBT and vPvB assessment							n.a.
Other information:	AOX		0	%			

Isotridecanol, ethoxylated

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to algae:	EC50	72h	>=10	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
Toxicity to bacteria:	EC50	17h	>1000	mg/l	Pseudomonas putida	DIN 38412 T.8	
12.1. Toxicity to fish:	LC50	96h	1-10	mg/l	Brachydanio rerio	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to fish:	LC50	96h	1 -10	mg/l	Cyprinus caprio	OECD 203 (Fish, Acute Toxicity Test)	References
12.1. Toxicity to daphnia:	EC50	48h	4,7	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	2,48-3,76	mg/l	Daphnia magna		
12.2. Persistence and degradability:		28d	67	%		OECD 301 B (Ready Biodegradability - Co2 Evolution Test)	
12.2. Persistence and degradability:		28d	>60	%		OECD 301 E (Ready Biodegradability - Modified OECD Screening Test)	
12.2. Persistence and degradability:		28d	>70	%		OECD 301 A (Ready Biodegradability - DOC Die-Away Test)	
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance
Other information:	DOC		600	mg/g			
Other information:	COD		1980	mg/g		DIN 38409-H41	
Water solubility:							Soluble

Copper

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.5. Results of PBT and vPvB assessment							No PBT substance, No vPvB substance

SECTION 13: Disposal considerations

13.1 Waste treatment methods
For the substance / mixture / residual amounts

EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be

allocated under certain circumstances. (2014/955/EU)
12 01 14 machining sludges containing hazardous substances
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
E.g. dispose at suitable refuse site.
E.g. suitable incineration plant.
Do not dispose of with household waste.

For contaminated packing material

Pay attention to local and national official regulations.
Empty container completely.
Uncontaminated packaging can be recycled.
Dispose of packaging that cannot be cleaned in the same manner as the substance.
Recommended cleaner:
Water
If applicable
Cleaning product

SECTION 14: Transport information

General statements

14.1. UN number or ID number: 3260

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name:
UN 3260 CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC CHLORIDE)

14.3. Transport hazard class(es): 8
14.4. Packing group: III

Classification code: C2
LQ: 5 kg
14.5. Environmental hazards: environmentally hazardous
Tunnel restriction code: E

Transport by sea (IMDG-code)

14.2. UN proper shipping name:
CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC CHLORIDE)

14.3. Transport hazard class(es): 8
14.4. Packing group: III

EmS: F-A, S-B
Marine Pollutant: Yes
14.5. Environmental hazards: environmentally hazardous

Transport by air (IATA)

14.2. UN proper shipping name:
Corrosive solid, acidic, inorganic, n.o.s. (ZINC CHLORIDE)

14.3. Transport hazard class(es): 8
14.4. Packing group: III
14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.
All persons involved in transporting must observe safety regulations.
Precautions must be taken to prevent damage.

14.7. Maritime transport in bulk according to IMO instruments

Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account.
Danger code and packing code on request.
Comply with special provisions.

SECTION 15: Regulatory information

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

Observe restrictions:
Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
Comply with trade association/occupational health regulations.

Directive 2012/18/EU ("Seveso III"), Annex I, Part 1 - The following categories apply to this product (others may also need to be considered according to storage, handling etc.):

Hazard categories	Notes to Annex I	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Lower-tier requirements	Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of - Upper-tier requirements
E2		200	500

The Notes to Annex 1 of Directive 2012/18/EU, in particular those named in the tables here and notes 1-6, must be taken into account when assigning categories and qualifying quantities.

Directive 2010/75/EU (VOC): 0 %

Observe incident regulations.

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 1-16
Employee training in handling dangerous goods is required.
These details refer to the product as it is delivered.
Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Skin Corr. 1B, H314	Classification according to calculation procedure.
STOT SE 3, H335	Classification according to calculation procedure.
Eye Dam. 1, H318	Classification according to calculation procedure.
Aquatic Chronic 2, H411	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Skin Corr. — Skin corrosion
STOT SE — Specific target organ toxicity - single exposure - respiratory tract irritation
Eye Dam. — Serious eye damage
Aquatic Chronic — Hazardous to the aquatic environment - chronic
Acute Tox. — Acute toxicity - oral
Aquatic Acute — Hazardous to the aquatic environment - acute
Skin Irrit. — Skin irritation
Eye Irrit. — Eye irritation

Key literature references and sources for data:

Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.
Guidelines for the preparation of safety data sheets as amended (ECHA).
Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
Safety data sheets for the constituent substances.

ECHA Homepage - Information about chemicals.
GESTIS Substance Database (Germany).
German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
National Lists of Occupational Exposure Limits for each country as amended.
Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

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Any abbreviations and acronyms used in this document:

acc., acc. to according, according to
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOX Adsorbable organic halogen compounds
approx. approximately
Art., Art. no. Article number
ASTM ASTM International (American Society for Testing and Materials)
ATE Acute Toxicity Estimate
BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
BCF Bioconcentration factor
BSEF The International Bromine Council

bw body weight
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
DOC Dissolved organic carbon
dw dry weight
e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
EC European Community
ECHA European Chemicals Agency
ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
EEC European Economic Community
EINECS European Inventory of Existing Commercial Chemical Substances
ELINCS European List of Notified Chemical Substances
EN European Norms
EPA United States Environmental Protection Agency (United States of America)
ErCx, EμCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
etc. et cetera
EU European Union
EVAL Ethylene-vinyl alcohol copolymer
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
Koc Adsorption coefficient of organic carbon in the soil
Kow octanol-water partition coefficient
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC (Code) International Bulk Chemical (Code)
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
LC50 Lethal Concentration to 50 % of a test population
LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow Logarithm of octanol-water partition coefficient
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon

UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
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