

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 (REACH), (EU) 2020/878

Print date: 17 Dec 2024

Version: 2



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Easysolder Flux 100ml

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

1.1. Product identifier

Trade name/designation:

Easysolder Flux 100ml

Article No.:

T373100

UFI:

SN3F-F7NN-KDHK-F6AS

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

Use of the substance/mixture:

Metal soldering

1.3. Details of the supplier of the safety data sheet

Supplier:

KANDO Service GmbH

Hartleitnerstraße 3

4653 Eberstälzell

Austria

Telephone: +43 (0) 7241 213 79

E-mail: msds@kando.eu

1.4. Emergency telephone number

Vergiftungsinformationszentrale (VIZ), Stubenring 6, 1010 Wien, 24h: 01 406 43 43, Montag - Freitag: 8 bis 16 Uhr, Tel.: 01 406 68 98 (keine medizinische Auskunft) (Only available during office hours.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) (<i>Acute Tox. 4</i>)	H302: Harmful if swallowed.	
Skin corrosion/irritation (<i>Skin Corr. 1B</i>)	H314: Causes severe skin burns and eye damage.	
Respiratory or skin sensitisation (<i>Skin Sens. 1</i>)	H317: May cause an allergic skin reaction.	
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	
STOT-single exposure (<i>STOT SE 3</i>)	H335: May cause respiratory irritation.	
Reproductive toxicity (<i>Repr. 1B</i>)	H360Df: May damage the unborn child. Suspected of damaging fertility.	
Hazardous to the aquatic environment (<i>Aquatic Chronic 2</i>)	H411: Toxic to aquatic life with long lasting effects.	

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2.2. Label elements

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

Hazard pictograms:



GHS05
Corrosion



GHS07
Exclamation mark



GHS08
Health hazard



GHS09
Environment

Signal word: Danger

Hazard components for labelling:

ammonium tetrafluoroborate; tetrafluoroboric acid; zinc bis(tetrafluoroborate); 2-(2-aminoethylamino)ethanol

Hazard statements for health hazards	
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H360Df	May damage the unborn child. Suspected of damaging fertility.

Hazard statements for environmental hazards	
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements Prevention	
P201	Obtain special instructions before use.
P260	Do not breathe vapours and spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing and eye protection/face protection.

Precautionary statements Response	
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.
P308 + P313	IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Other adverse effects:

The mixture does not contain a vPvB substance (vPvB = very persistent, very bioaccumulative) or does not fall under Annex XIII of Regulation (EC) 1907/2006 (< 0.1 %). The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or does not fall under Annex XIII of Regulation (EC) 1907/2006 (< 0.1 %). The mixture does not contain any substance with endocrine-disrupting properties (< 0.1 %). Formation of harmful vapours possible during thermal processing. Electric shock may cause death. Risk of burns. Sweat vapours may cause lung cancer.

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients / Hazardous impurities / Stabilisers:

Product identifiers	Substance name Classification according to Regulation (EC) No 1272/2008 [CLP]	Concentration
CAS No.: 111-41-1 EC No.: 203-867-5 Index No.: 603-194-00-0	2-(2-aminoethylamino)ethanol Eye Dam. 1 (H318), Repr. 1B (H360Df), Skin Corr. 1B (H314), Skin Sens. 1 (H317) Danger Specific concentration limit (SCL) STOT SE 3; H335: C ≥ 5% Acute Toxicity Estimate ATE (oral) 3,000 mg/kg ATE (dermal) > 2,000 mg/kg	20 - < 50 Vol-%
CAS No.: 13826-83-0 EC No.: 237-531-4	ammonium tetrafluoroborate Eye Dam. 1 (H318), Met. Corr. 1 (H290), Skin Corr. 1B (H314) Danger	10 - < 20 Vol-%
CAS No.: 1314-13-2 EC No.: 215-222-5 Index No.: 030-013-00-7 REACH No.: 01-2119463881-32	zinc oxide Aquatic Acute 1 (H400), Aquatic Chronic 1 (H410) Warning M-factor (acute): 1 M-factor (chronic): 1 Acute Toxicity Estimate ATE (oral) > 5,000 mg/kg ATE (dermal) > 2,000 mg/kg ATE (inhalation, gases) > 5,700 ppmV	5 - < 10 Vol-%
CAS No.: 16872-11-0 EC No.: 240-898-3 Index No.: 009-010-00-X	tetrafluoroboric acid Acute Tox. 3 (H301), Eye Dam. 1 (H318), Skin Corr. 1B (H314) Danger Specific concentration limit (SCL) Skin Corr. 1B; H314: C ≥ 25% Skin Irrit. 2; H315: C ≥ 10% Eye Irrit. 2; H319: C ≥ 10% Acute Toxicity Estimate ATE (oral) 100 mg/kg	5 - < 10 Vol-%
CAS No.: 13826-88-5 EC No.: 237-534-0	zinc bis(tetrafluoroborate) Acute Tox. 4 (H302, H312, H332), Eye Dam. 1 (H318), Skin Corr. 1B (H314) Danger Acute Toxicity Estimate ATE (oral) 500 mg/kg ATE (dermal) 1,100 mg/kg ATE (inhalation, vapour) 11 mg/L ATE (inhalation, dust/mist) 1.5 mg/L	5 - < 10 Vol-%
CAS No.: 13814-97-6 EC No.: 237-487-6	tin bis(tetrafluoroborate) Eye Dam. 1 (H318), Skin Corr. 1B (H314) Danger	5 - < 10 Vol-%
CAS No.: 111-42-2 EC No.: 203-868-0 Index No.: 603-071-00-1	2,2'-iminodiethanol Acute Tox. 4 (H302), Aquatic Chronic 3 (H412), Eye Dam. 1 (H318), STOT RE 2 (H373), Skin Irrit. 2 (H315) Danger Acute Toxicity Estimate ATE (oral) 1,600 mg/kg ATE (dermal) > 5,000 mg/kg	5 - < 10 Vol-%

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

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SECTION 4: First aid measures

4.1. Description of first aid measures

General information:

First aider: Pay attention to self-protection!
Never give anything by mouth to an unconscious person!
In case of radiation burns from the arc ("flashing"), consult a doctor.

Following inhalation:

Remove person from danger zone.
Fresh air supply, consult a doctor in case of complaints.
If unconscious but breathing normally, place in recovery position and seek medical advice.
In case of irregular breathing or respiratory arrest, initiate artificial respiration.

In case of skin contact:

Wash thoroughly with plenty of water, remove contaminated, soaked clothing immediately, call a doctor immediately, have data sheet ready. Sensitisation through skin contact possible. Burns to skin and mucous membranes possible. Cover burns aseptically.

After eye contact:

Remove contact lenses. Rinse thoroughly with plenty of water for several minutes, call a doctor immediately, have data sheet ready. Protect uninjured eye. Follow up with an ophthalmologist. Risk of serious eye damage. Risk of blindness.

Following ingestion:

Rinse mouth thoroughly with water. Do not induce vomiting, seek medical advice immediately. Harmful if swallowed. Causes burns.

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

If applicable, delayed symptoms and effects can be found in section 11. or in the routes of intake under section 4.1.
In certain cases, the symptoms of poisoning may only appear after a longer period of time/after several hours.
It may occur: Metal fume fever, dizziness, nausea, irritation of the respiratory tract, irritation of the mouth and throat, irritation of the eyes, irritation of the skin, asthmatic complaints. With prolonged contact: Siderosis (iron deposits in the lungs), influence/damage to the central nervous system, bronchitis, lung damage.

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

Treat symptomatically.
Eye wash station and safety shower should be located near the processing area.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

Full water jet

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products:

Carbon oxides, Nitrogen oxides (NO_x), Boroxid, Hydrogen fluoride, Metal Oxides/Oxides, Zinc oxide, toxic gases, halogenated compounds, Ammonia (NH₃), Ozone

5.3. Advice for firefighters

Wear personal protection equipment (refer to section 8).
Do not inhale explosion and combustion gases.
Wear self-contained breathing apparatus.
Full protection suit.
Fire residues and contaminated extinguishing water must be disposed of in accordance with official regulations.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Personal precautions:

In case of spillage or accidental release, to prevent contamination, wear personal protective equipment from section 8. Ensure adequate ventilation, remove sources of ignition. In case of solid or powdery products, avoid dust formation. Leave the danger zone as far as possible, use existing emergency plans if necessary. Keep unprotected persons away. Ensure adequate ventilation. Avoid contact with eyes, skin and inhalation.

6.1.2. For emergency responders

Personal protection equipment:

Wear personal protection equipment (refer to section 8).

6.2. Environmental precautions

Contain in case of escape of larger quantities. Stop leak if safe to do so. Do not allow to enter into surface water or drains. Avoid penetration into surface and ground water as well as into the soil. In case of accidental discharge into drains, inform competent authorities.

6.3. Methods and material for containment and cleaning up

For cleaning up:

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

6.4. Reference to other sections

For further information on personal protective equipment: see section 8.

For further information on disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures

Advices on safe handling:

Ensure good room ventilation. Avoid aerosol formation. Avoid eye and skin contact and inhalation. Eye wash station and safety shower should be located near the processing area. Do not eat, drink, smoke or store food in the work area. Observe the information on the label and the instructions for use. Only use working procedures according to the instructions for use. Pregnant women should avoid contact with this product. During processing: Do not inhale dust. Inhalation of welding fumes and gases may endanger your health.

Advices on general occupational hygiene

The usual precautions when handling chemicals must be observed.

Wash hands before breaks and after work.

Keep away from food, drink and animal feed.

Remove contaminated clothing and protective equipment before entering areas where food will be served.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels:

Prevent access for unauthorised persons. Keep locked up. Keep only in original packaging. Store at room temperature. Store in a dry place.

Storage class (TRGS 510, Germany): 6.1D – Non-combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects

7.3. Specific end use(s)

Recommendation:

No further relevant information available.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure limit values

Limit value type (country of origin)	Substance name	① Long-term occupational exposure limit value ② Short-term occupational exposure limit value ③ Instantaneous value ④ Monitoring and observation processes ⑤ Remark
MAK (AT)	zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	① 5 mg/m ³ ⑤ (alveolengängige Fraktion)
MAK (AT)	2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	② 0.92 ppm (4 mg/m ³) ⑤ (max. 4x15 min./Schicht, kann über die Haut aufgenommen werden) H, Sh
MAK (AT)	2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	① 0.46 ppm (2 mg/m ³) ⑤ (kann über die Haut aufgenommen werden) H, Sh

8.1.2. Biological limit values

No data available

8.1.3. DNEL-/PNEC-values

Substance name	DNEL value	① DNEL type ② Exposure route
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	5 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	2.5 mg/m ³	① DNEL Consumer ② Long-term - inhalation, systemic effects
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	0.5 mg/m ³	① DNEL worker ② Long-term - inhalation, local effects
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	83 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	83 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	0.83 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	4 mg/m ³	① DNEL worker ② Long-term - inhalation, systemic effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	33 mg/m ³	① DNEL worker ② Acute - inhalation, systemic effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	1 mg/m ³	① DNEL worker ② Long-term - inhalation, local effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.25 mg/m ³	① DNEL Consumer ② Long-term - inhalation, local effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.13 mg/kg bw/day	① DNEL worker ② Long-term - dermal, systemic effects

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Substance name	DNEL value	① DNEL type ② Exposure route
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.07 mg/kg bw/day	① DNEL Consumer ② Long-term - dermal, systemic effects
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.06 mg/kg bw/day	① DNEL Consumer ② Long-term - oral, systemic effects

Substance name	PNEC Value	① PNEC type
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	6.1 mg/L	① PNEC aquatic, marine water
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	52 mg/L	① PNEC sewage treatment plant
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	117 mg/L	① PNEC sediment, freshwater
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	56.5 mg/L	① PNEC sediment, marine water
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	35.6 mg/kg	① PNEC soil
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.0022 mg/L	① PNEC aquatic, freshwater
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.00022 µg/L	① PNEC aquatic, marine water
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	100 mg/L	① PNEC sewage treatment plant
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.0627 mg/kg bw/day	① PNEC sediment, freshwater
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.00627 mg/ kg bw/day	① PNEC sediment, marine water
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0	0.0112 mg/kg bw/day	① PNEC soil

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Ensure good ventilation. This can be achieved by local exhaust ventilation or general exhaust air. If this is not sufficient to keep the concentration below the occupational exposure limits (OEL), suitable respiratory protection must be worn. Applies only if exposure limits are listed here. Appropriate assessment methods for verifying the effectiveness of the protective measures taken include metrological and non-measured methods of determination. Such methods are described by e.g. EN 14042, TRGS 402 (Germany). EN 14042 "Workplace atmospheres. Guidance for the application and use of methods and equipment for the determination of chemical and biological agents". TRGS 402 (Germany) "Determining and assessing the hazards of activities involving hazardous substances - Inhalation exposure".

8.2.2. Personal protection equipment



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Eye/face protection:

Safety goggles with side shields (EN 166).

Wear face protection. (EN 166)

Safety helmet. When flame cutting and welding, use safety goggles with suitable filter lenses (EN169).

Skin protection:

Hand protection:

Chemical resistant protective gloves (EN ISO 374).

If necessary:

Protective gloves made of nitrile (EN ISO 374).

Minimum layer thickness in mm: 0.5

Permeation time (breakthrough time) in minutes: 120

The breakthrough times determined according to EN 16523-1 were not carried out under practical conditions. A maximum wearing time corresponding to 50% of the breakthrough time is recommended.

Use welding gloves.

Additional information on hand protection - No tests have been carried out. For mixtures, the selection was made to the best of our knowledge and based on the information provided by the ingredients. For substances, the selection was derived from the glove manufacturer's information. Final selection of glove material must be made with consideration of breakthrough times, permeation rates and degradation. The 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 calculated in advance and must therefore be checked before use. The exact breakthrough time of the glove material must be obtained from the protective glove manufacturer and must be observed.

Body protection:

Protective work clothing (e.g. safety shoes EN ISO 20345, long-sleeved work clothing).

Apron

Boots (EN ISO 20347)

Long trousers, long-sleeved overall with tight-fitting cuffs.

Respiratory protection:

In case of inadequate ventilation wear respiratory protection.

Observe the wear time limits as specified by the manufacturer.

Respirator filter ABEK-P2 (EN 14387), identification colour brown, grey, yellow, green, white.

Thermal hazards:

In case of radiation burns from the arc ("flashing"), consult a doctor.

Arc radiation can cause severe eye and skin damage.

Insulating gloves EN 407 (heat).

Other protection measures:

The usual precautions when handling chemicals must be observed.

Wash hands before breaks and after work.

Keep away from food, drink and animal feed.

Remove contaminated clothing and protective equipment before entering areas where food will be served.

8.2.3. Environmental exposure controls

No data available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state: Liquid

Colour: amber

Odour: odourless

flammability: No data available

Safety relevant basis data

Parameter	Value	① Method ② Remark
pH	10.5	
Melting point	No data available	

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Parameter	Value	① Method	② Remark
Freezing point	No data available		
Initial boiling point and boiling range	No data available		
Flash point	No data available		
Evaporation rate	No data available		
Auto-ignition temperature	No data available		
Upper/lower flammability or explosive limits	No data available		
Vapour pressure	No data available		
Vapour density	No data available		
Density	1.3 g/cm ³		
Bulk density	not applicable		
Water solubility	No data available		
Dynamic viscosity	No data available		
Kinematic viscosity	No data available		

9.2. Other information

The product is not explosive.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product has not been tested.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

No dangerous reactions known.

10.4. Conditions to avoid

Avoid heating.

10.5. Incompatible materials

See also section 7. Avoid contact with strong alkalis. Avoid contact with strong acids. Avoid contact with strong oxidising agents. Oxidisable substances.

10.6. Hazardous decomposition products

See section 5.2.

Do not breathe fume.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicological information

Acute Toxicity Estimate for Mixtures	
ATE (oral):	1,584.15 mg/kg
ATE (dermal):	22,000 mg/kg
ATE (inhalation, dust/mist):	30 mg/L
2-(2-aminoethylamino)ethanol CAS No.: 111-41-1 EC No.: 203-867-5	
LD ₅₀ oral:	3,000 mg/kg (Rat)
LD ₅₀ dermal:	>2,000 mg/kg (Rabbit)
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5	
LD ₅₀ oral:	>5,000 mg/kg (Rat)
LD ₅₀ dermal:	>2,000 mg/kg (Rat)
LC ₅₀ Acute inhalation toxicity (gas):	>5,700 ppmV 4 h (Rat)

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tetrafluoroboric acid CAS No.: 16872-11-0 EC No.: 240-898-3
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LD₅₀ oral: 100 mg/kg (Rat)
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2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0
--

LD₅₀ oral: 1,600 mg/kg (Rat)
--

LD₅₀ dermal: >5,000 mg/kg

Acute oral toxicity:

Based on available data, the classification criteria are not met.

Acute dermal toxicity:

Based on available data, the classification criteria are not met.

Acute inhalation toxicity:

Based on available data, the classification criteria are not met.

Skin corrosion/irritation:

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

Serious eye damage/irritation:

Causes severe skin burns and eye damage.

Respiratory or skin sensitisation:

May cause respiratory irritation.

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:

May damage the unborn child. Suspected of damaging fertility.

STOT-single exposure:

Harmful if swallowed.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard:

Harmful if swallowed.

11.2. Information on other hazards

Endocrine disrupting properties:

None of the ingredients are included.

SECTION 12: Ecological information

12.1. Toxicity

2-(2-aminoethylamino)ethanol CAS No.: 111-41-1 EC No.: 203-867-5

LC₅₀: >100 mg/L 4 d (fish, <i>Oncorhynchus mykiss</i>)

EC₅₀: 190 mg/L 2 d (crustaceans, <i>Daphnia magna</i>)

EC₅₀: 135 mg/L (<i>Pseudomonas putida</i>)
--

zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5
--

LC₅₀: 1.1 - 2.5 mg/L 4 d (fish, <i>Oncorhynchus mykiss</i>)
--

IC₅₀: 1.85 mg/L 4 d (Algae/water plant, <i>Skeletonema costatum</i>)

LC₅₀: 3.31 - 8.062 mg/L 4 d (fish, <i>Brachydanio rerio</i>)

LC₅₀: >320 mg/L 4 d (fish, <i>Lepomis macrochirus</i>)

EC₅₀: 1 mg/L 2 d (crustaceans, <i>Daphnia magna</i>) OECD 202
--

EC₅₀: 0.412 - 0.83 mg/L 2 d (crustaceans, <i>Ceriodaphnia spec.</i>) U.S. EPA ECOTOX Database
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tetrafluoroboric acid CAS No.: 16872-11-0 EC No.: 240-898-3
LC₅₀ : 2,600 mg/L 4 d (fish, Brachydanio rerio) OECD 203
NOEC : 188 mg/L 21 d (crustaceans, Daphnia magna) U.S. EPA ECOTOX Database
LC₅₀ : 4,766 mg/L 2 d (crustaceans, Daphnia magna) OECD 202
EC₅₀ : >100 mg/L 3 d (Algae/water plant, Pseudokirchneriella subcapitata) OECD 201
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0
LC₅₀ : 1,460 mg/L 4 d (fish, Pimephales promelas) OECD 203
EC₅₀ : 55 mg/L 2 d (crustaceans, Daphnia magna) OECD 202
ErC₅₀ : 2.2 mg/L 4 d (Algae/water plant, Pseudokirchneriella subcapitata) OECD 201

Assessment/classification:

No further relevant information available.

12.2. Persistence and degradability

2-(2-aminoethylamino)ethanol CAS No.: 111-41-1 EC No.: 203-867-5
Biodegradation: Yes, slowly
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0
Biodegradation: Yes, rapidly

Biodegradation:

No further relevant information available.

12.3. Bioaccumulative potential

zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5
Log K_{ow} : 2.2
Bioconcentration factor (BCF) : 28,960

Accumulation / Evaluation:

No further relevant information available.

12.4. Mobility in soil

No further relevant information available.

12.5. Results of PBT and vPvB assessment

2-(2-aminoethylamino)ethanol CAS No.: 111-41-1 EC No.: 203-867-5
Results of PBT and vPvB assessment: —
ammonium tetrafluoroborate CAS No.: 13826-83-0 EC No.: 237-531-4
Results of PBT and vPvB assessment: —
zinc oxide CAS No.: 1314-13-2 EC No.: 215-222-5
Results of PBT and vPvB assessment: —
tetrafluoroboric acid CAS No.: 16872-11-0 EC No.: 240-898-3
Results of PBT and vPvB assessment: —
zinc bis(tetrafluoroborate) CAS No.: 13826-88-5 EC No.: 237-534-0
Results of PBT and vPvB assessment: —
tin bis(tetrafluoroborate) CAS No.: 13814-97-6 EC No.: 237-487-6
Results of PBT and vPvB assessment: —
2,2'-iminodiethanol CAS No.: 111-42-2 EC No.: 203-868-0
Results of PBT and vPvB assessment: —

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

None of the ingredients are included.

12.7. Other adverse effects

No further relevant information available.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

The waste codes given are recommendations based on the expected use of this product. Due to the specific use and disposal conditions at the user's site, other waste codes may be assigned under certain circumstances. (2014/955/EU)

Waste treatment options








Appropriate disposal / Product:

Disposal via waste water is not recommended. Observe local regulations. For example, suitable incineration plant. For example, dispose of in a suitable landfill.

Appropriate disposal / Package:

Observe local regulations. Empty container completely. Non-contaminated packaging can be reused. Packaging that cannot be cleaned must be disposed of in the same way as the substance.

SECTION 14: Transport information

Land transport (ADR/RID)	Inland waterway craft (ADN)	Sea transport (IMDG)	Air transport (ICAO-TI / IATA-DGR)
14.1. UN number or ID number			
UN 1760	UN 1760	UN 1760	UN 1760
14.2. UN proper shipping name			
CORROSIVE LIQUID, N.O.S. (2-(2-aminoethylamino)ethanol, ammonium tetrafluoroborate)	CORROSIVE LIQUID, N.O.S. (2-(2-aminoethylamino)ethanol, ammonium tetrafluoroborate)	CORROSIVE LIQUID, N.O.S. (2-(2-aminoethylamino)ethanol, ammonium tetrafluoroborate)	CORROSIVE LIQUID, N.O.S. (2-(2-aminoethylamino)ethanol, ammonium tetrafluoroborate)
14.3. Transport hazard class(es)			
 8	 8	 8	 8
14.4. Packing group			
II	II	II	II
14.5. Environmental hazards			
		 MARINE POLLUTANT	No
14.6. Special precautions for user			
Special Provisions: 274 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E2 Hazard identification number (Kemler No.): 80 Classification code: C9 Tunnel restriction code: (E)	Special Provisions: 274 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E2 Classification code: C9	Special Provisions: 274 Limited quantity (LQ): 1 L Excepted Quantities (EQ): E2 EmS-No.: F-A, S-B	Special Provisions: A3 Limited quantity (LQ): Y840 Excepted Quantities (EQ): E2

14.7. Maritime transport in bulk according to IMO instruments

The freight is not carried as bulk goods but as general cargo, therefore not applicable. Minimum quantity regulations are not observed here. Hazard number and packaging code on request. Please observe the special provisions.

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SECTION 15: Regulatory information

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

15.1.1. EU legislation

Restrictions on use:

Observe national regulations/laws on the protection of young people at work (especially the national implementation of Directive 94/33/EC)! Regulation (EC) No 1907/2006, Annex XVII: 2-(2-aminoethylamino)ethanol. Observe national regulations/laws on maternity protection (especially the national implementation of Directive 92/85/EEC)! Observe regulations of the employers' liability insurance association/occupational medicine.

Other regulations (EU):

Hazard categories:

- E2 Hazardous to the Aquatic Environment in Category Chronic 2

15.1.2. National regulations

No data available

15.2. Chemical Safety Assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

16.1. Indication of changes

No data available

16.2. Abbreviations and acronyms

No data available

16.3. Key literature references and sources for data

No data available

16.4. Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]

Hazard classes and hazard categories	Hazard statements	Classification procedure
Acute toxicity (oral) (<i>Acute Tox. 4</i>)	H302: Harmful if swallowed.	
Skin corrosion/irritation (<i>Skin Corr. 1B</i>)	H314: Causes severe skin burns and eye damage.	
Respiratory or skin sensitisation (<i>Skin Sens. 1</i>)	H317: May cause an allergic skin reaction.	
Serious eye damage/eye irritation (<i>Eye Dam. 1</i>)	H318: Causes serious eye damage.	
STOT-single exposure (<i>STOT SE 3</i>)	H335: May cause respiratory irritation.	
Reproductive toxicity (<i>Repr. 1B</i>)	H360Df: May damage the unborn child. Suspected of damaging fertility.	
Hazardous to the aquatic environment (<i>Aquatic Chronic 2</i>)	H411: Toxic to aquatic life with long lasting effects.	

16.5. List of relevant hazard statements and/or precautionary statements from sections 2 to 15

Hazard statements	
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

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Hazard statements	
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360Df	May damage the unborn child. Suspected of damaging fertility.
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.
H412	Harmful to aquatic life with long lasting effects.

16.6. Training advice

No data available

16.7. Additional information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-mentioned supplier nor its subsidiaries assume any liability with regard to the correctness or completeness of the information provided. A final determination of the suitability of individual materials is the sole responsibility of the user. All materials may involve unknown risks and should be used with caution. While certain risks are described herein, we cannot guarantee that these are the only possible risks.