

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

1.1 Product identifier

Trade name: Elektrolyt AE 25

UFI: RS00-Q0YN-R007-S8NY

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

General use: Electrolytic/electrochemical metal marking for Bronze, Copper, Brass and Tin.

1.3 Details of the supplier of the safety data sheet

Company name: Schilling Marking Systems GmbH

Street/POB-No.: In Grubenäcker 1

Postal Code, city: DE-78532 Tuttlingen

WWW: www.schilling-marking.de

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Frau Bianca Schilling,

Telephone: +49 (0)7461 9472-0

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1.4 Emergency telephone number

GIZ-Nord, Germany Telephone: +49 (0)551-19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to EC regulation 1272/2008 (CLP)

Eye Dam. 1; H318 Causes serious eye damage.

2.2 Label elements

Labelling (CLP)



Signal word: **Danger**

Hazard statements: H318 Causes serious eye damage.

Precautionary statements: P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P280 Wear protective gloves/protective clothing/eye protection.

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.

Special labelling

Text for labelling: Contains: Calcium nitrate-4-hydrate

2.3 Other hazards

Electrolytic vapours may form during the electrochemical process.

Existing disorders like skin and respiratory organ diseases may worsen by exposure to electrolyte vapours.

Special danger of slipping by leaking/spilling product.

Endocrine disrupting properties, Results of PBT and vPvB assessment:

No data available

SECTION 3: Composition/information on ingredients

3.1 Substances: not applicable

3.2 Mixtures

Chemical characterisation: mixture of water/mineral salt and complexing agent.

Hazardous ingredients:

| Identifiers | Designation Classification | Content |
|---|--|-----------|
| REACH 01-2119495093-35-xxxx EC No. 233-332-1 CAS 13477-34-4 | Calcium nitrate-4-hydrate Acute Tox. 4; H302. Eye Dam. 1; H318. | 10 - 25 % |

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

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|-------------------------|--|
| General information: | First aider: Pay attention to self-protection! If medical advice is needed, have product container or label at hand. Take off immediately all contaminated clothing and wash it before reuse. |
| In case of inhalation: | If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if problems persist. |
| Following skin contact: | Immediately clean with water and soap followed by thorough rinsing. Take off immediately all contaminated clothing and wash it before reuse. In case of skin reactions, consult a physician. |
| After eye contact: | Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently seek the immediate attention of an ophthalmologist. |
| After swallowing: | Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. Immediately call a POISON CENTER/doctor. |

4.2 Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Supervision and correction of circulation, balance of acid-base and electrolyte level.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Product is non-combustible. Extinguishing materials should therefore be selected according to surroundings.

Extinguishing media which must not be used for safety reasons:

Full water jet

5.2 Special hazards arising from the substance or mixture

May form dangerous gases and vapours in case of fire.

In the event of a fire, the following may be produced when the water evaporates:
corrosive gases/vapours, nitrogen oxides (NO_x), carbon monoxide and carbon dioxide.

5.3 Advice for firefighters

Special protective equipment for firefighters:

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information:

Use fine water spray to cool endangered containers.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow water used to extinguish fire to enter drains, ground or waterways.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe mist/vapours/spray. Avoid contact with the substance.

If possible, eliminate leakage. Provide adequate ventilation.

Wear appropriate protective equipment. Keep unprotected people away.

Take off immediately all contaminated clothing and wash it before reuse. Have eye wash bottle or eye rinse ready at work place.

6.2 Environmental precautions

Do not allow to enter into ground-water, surface water or drains.

If necessary notify appropriate authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent materials such as sand, siliceous earth, acid- or universal binder. Store in special closed containers and dispose of according to ordinance. Final cleaning.

In case of spills of large quantities: Neutralize with soda or with slaked lime, and send to waste removal.

Additional information:

Special danger of slipping by leaking/spilling product.

6.4 Reference to other sections

Refer additionally to section 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advices on safe handling:

Provide adequate ventilation, and local exhaust as needed. Do not breathe mist/vapours/spray.

Do not get in eyes, on skin, or on clothing. Wear appropriate protective equipment.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Take off immediately all contaminated clothing and wash it before reuse.

Work place should be equipped with a shower and an eye rinsing apparatus.

Precautions against fire and explosion:

Product is non-combustible

Take standard precautions to prevent fire.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storerooms and containers:

Keep container tightly closed. Store at room temperature.

Do not freeze. Avoid overheating. Danger of bursting container.

Hints on joint storage:

Keep away from food, drink and animal feedingstuffs. Nicht zusammen mit starken Säuren, starken Basen, Reduktionsmitteln oder Oxidationsmitteln lagern.

Storage class: 12 = Non-combustible liquids

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Additional information: Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Provide for good ventilation or exhaust system or work with completely self-contained equipment.

Personal protection equipment**Occupational exposure controls**

Respiratory protection: In case of inadequate ventilation wear respiratory protection.
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used.
Recommendation: Combination filter/Use filter type B-P2 according to EN 14387.

Hand protection: Protective gloves according to EN 374.
Glove material: Nitrile rubber-Layer thickness: 0,11 mm.
Breakthrough time: >480 min.
Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to EN 166.

Body protection: Wear suitable protective clothing.
protective apron

General protection and hygiene measures:
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing and wash it before reuse.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
Have eye wash bottle or eye rinse ready at work place.

Environmental exposure controls

Do not allow to enter into ground-water, surface water or drains.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

| | |
|---|--|
| Physical state at 20 °C and 101.3 kPa | liquid |
| Colour: | Colourless up to weak yellowish, clear |
| Odour: | Weak |
| Odour threshold: | No data available |
| Melting point/freezing point: | approx. 0 °C |
| Initial boiling point and boiling range: | approx. 100 °C |
| Flammability: | No data available |
| Upper/lower flammability or explosive limits: | No data available |
| Flash point/flash point range: | not combustible |
| Decomposition temperature: | No data available |
| pH: | at 20 °C: 5,0 - 5,5 |
| Viscosity, kinematic: | No data available |
| Water solubility: | at 20 °C: Completely miscible |

| | |
|---|---------------------|
| Partition coefficient: n-octanol/water: | No data available |
| Vapour pressure: | No data available |
| Density: | at 20 °C: 1,16 g/mL |
| Vapour density: | No data available |
| Particle characteristics: | Not applicable |

9.2 Other information

| | |
|----------------------------|-------------------|
| Explosive properties: | No data available |
| Oxidizing characteristics: | No data available |
| Auto-ignition temperature: | No data available |
| Evaporation rate: | No data available |
| Additional information: | No data available |

SECTION 10: Stability and reactivity

10.1 Reactivity

See 10.3

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known.

10.4 Conditions to avoid

Keep away from heat sources, sparks and open flames.
Protect from frost and exposure to sun. Do not mix with other chemicals.

10.5 Incompatible materials

Strong oxidizing agents, reducing agent, strong acids and alkalis, combustible substances.

10.6 Hazardous decomposition products

Thermal decomposition: No data available

SECTION 11: Toxicological information

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

Toxicological effects: The statements are derived from the properties of the single components. No toxicological data is available for the product as such.

Acute toxicity (oral): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 2000 mg/kg

Acute toxicity (dermal): Based on available data, the classification criteria are not met.
ATEmix (calculated): > 5000 mg/kg

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.
May cause irritations.

Serious eye damage/irritation: Eye Dam. 1; H318 = Causes serious eye damage.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: 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.

Effects on or via lactation: Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Lack of data.

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

11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information: Information about Calcium nitrate-4-hydrate (CAS No. 13477-34-4):
LD50 oral Rat < 2000 mg/kg/bw
LD50 dermal Rat >2000 mg/kg/bw

Symptoms

In case of inhalation:
Inhaling can lead to irritations of the respiratory tract and mucous membrane.

In case of ingestion: Diarrhoea, vomiting, spasms, acidosis.

After eye contact: Upon direct contact with eyes may cause burning, tearing, redness.

General remarks

Information about Calcium nitrate:
After absorption of large quantities: Methaemoglobinaemia.
Other symptoms: Dizziness, headache, weakness.
Existing disorders like skin and respiratory organ diseases may worsen by exposure to electrolyte vapours.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity: Information about Calcium nitrate-4-hydrate (CAS No. 13477-34-4):
fish toxicity:
LC50: 1.378 mg/L/96h (ECHA)
daphnia toxicity:
EC50: 490 mg/L/24h (ECHA)
Algae toxicity: (algae)
EC50: >1.700 mg/L/10d (ECHA)

Water Hazard Class: 1 = slightly hazardous to water

12.2 Persistence and degradability

Further details: No indication of bioaccumulation potential.

Effects in sewage plants: (aquatic micro-organisms) EC50 > 1000 mg/L (OECD 209)

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water:

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

General information: Do not allow to enter into ground-water, surface water or drains.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste key number: 11 01 98* = Wastes from chemical surface treatment and coating of metals and other materials (eg. galvanic processes, zinc coating processes, pickling processes, etching, phosphatising, alkaline degreasing, anodising)

* = Evidence for disposal must be provided.

Recommendation: Special waste. Dispose of waste according to applicable legislation.

Package

Waste key number: 15 01 02 = Plastic packaging

Recommendation: Dispose of waste according to applicable legislation.

Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

ADR/RID, ADN, IMDG, IATA-DGR:

not applicable

14.2 UN proper shipping name

ADR/RID, ADN, IMDG, IATA-DGR:

Not restricted

14.3 Transport hazard class(es)

ADR/RID, ADN, IMDG, IATA-DGR:

not applicable

14.4 Packing group

ADR/RID, ADN, IMDG, IATA-DGR:

not applicable

14.5 Environmental hazards

Dangerous for the environment: Substance/mixture is not environmentally hazardous according to the criteria of the UN model regulations.

Marine pollutant - IMDG: no

14.6 Special precautions for user

No dangerous good in sense of these transport regulations.

14.7 Maritime transport in bulk according to IMO instruments

No data available

SECTION 15: Regulatory information

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

National regulations - Germany

Storage class: 12 = Non-combustible liquids

Water Hazard Class: 1 = slightly hazardous to water

Information on working limitations:

Observe employment restrictions for young people.

Further regulations, limitations and legal requirements:

No data available

National regulations - EC member states

Further regulations, limitations and legal requirements:

Use restriction according to REACH annex XVII, no.: 3, 75

15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

SECTION 16: Other information

To be used exclusively in accordance with the intended purpose. Do not use in household.

Wording of the H-phrases under paragraph 2 and 3:

H302 = Harmful if swallowed.

H318 = Causes serious eye damage.

Reason of change: General revision

Date of first version: 11.6.2008

Department issuing data sheet: see section 1: Department responsible for information

SAFETY DATA SHEET

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

Elektrolyt AE 25

Material number 22.025

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Abbreviations and acronyms:

- Acute Tox.: Acute toxicity
- ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- AS/NZS: Australian Standards/New Zealand Standards
- CAS: Chemical Abstracts Service
- CFR: Code of Federal Regulations
- CLP: Classification, Labelling and Packaging
- DMEL: Derived minimal effect level
- DNEL: Derived no-effect level
- EC: European Community
- EC50: Effective Concentration 50%
- EN: European Standard
- EQ: Excepted quantities
- EU: European Union
- Eye Dam.: Eye damage
- IATA: International Air Transport Association
- IATA-DGR: International Air Transport Association – Dangerous Goods Regulations
- IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
- IMDG Code: International Maritime Dangerous Goods Code
- LC50: Median lethal concentration
- LD50: Lethal dose 50%
- MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
- OSHA: Occupational Safety and Health Administration
- PBT: Persistent, bioaccumulative and toxic
- PNEC: Predicted no-effect concentration
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- RID: Regulations Concerning the International Carriage of Dangerous Goods by Rail
- TRGS: Technical Rules for Hazardous Substances
- vPvB: Very persistent and very bioaccumulative

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.