

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

### 1.1 Product identifier

Trade name: Elektrolyt AE 21

UFI: YN10-S0VM-T005-DPGM

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

General use: Electrolytic/electrochemical metal marking for stainless steels

### 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](http://www.schilling-marking.de)

E-mail: [info@schilling-marking.de](mailto:info@schilling-marking.de)

Telephone: +49 (0)7461 9472-0

Telefax: +49 (0)7461 9472-28

Department responsible for information:

Frau Bianca Schilling,

Telephone: +49 (0)7461 9472-0

Email: [info@schilling-marking.de](mailto:info@schilling-marking.de)

### 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 Irrit. 2; H319 Causes serious eye irritation.

### 2.2 Label elements

#### Labelling (CLP)



Signal word:

**Warning**

Hazard statements:

H319

Causes serious eye irritation.

Precautionary statements:

P101

If medical advice is needed, have product container or label at hand.

P102

Keep out of reach of children.

P264

Wash hands and face thoroughly after handling.

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.

P337+P313

If eye irritation persists: Get medical advice/attention.

### 2.3 Other hazards

Electrolytic vapours may form during the electrochemical process.  
May be harmful if inhaled.  
A corrosive effect cannot be ruled out because of the pH value.

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: Aqueous solution of inorganic salts and organic compounds.

Hazardous ingredients:

Identifiers	Designation Classification	Content
EC No. 201-069-1 CAS 5949-29-1	Citric acid monohydrate Eye Irrit. 2; H319. STOT SE 3; H335.	5 - 15 %
EC No. 231-554-3 CAS 7631-99-4	Sodium nitrate Ox. Sol. 3; H272. Acute Tox. 4; H302.	< 10 %
EC No. 200-662-2 CAS 67-64-1	Acetone Flam. Liq. 2; H225. Eye Irrit. 2; H319. STOT SE 3; H336. (EUH066).	< 5 %

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.

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: Take off contaminated clothing and wash it before reuse. Remove residues with water.  
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 consult an ophthalmologist.

After swallowing: Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Seek medical advice.

### 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

Treat symptomatically.

## 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

In the event of a fire, the following may be produced when the water evaporates: Nitrogen oxides (NOx), sulphur oxides, sodium compounds, 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.

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 contaminated clothing and wash it before reuse.

## 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.

Never return spills in original containers for re-use.

## 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 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 and in a well-ventilated place.

Keep container dry. Keep only in the original container.

Protect from heat and direct sunlight. Protect from frost.

Store containers in upright position. Store at room temperature.

Hints on joint storage:

Do not store together with: strong acids, alkalis.

Keep away from food, drink and animal feedingstuffs.

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

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
67-64-1	Acetone	Europe: IOELV: TWA	1210 mg/m <sup>3</sup> ; 500 ppm
		Germany: TRGS 900 Kurzzeit	2400 mg/m <sup>3</sup> ; 1000 ppm
		Germany: TRGS 900 Langzeit	1200 mg/m <sup>3</sup> ; 500 ppm

Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
67-64-1	Acetone	Germany: BAT, urine	50 mg/L	acetone	end of exposure or end of shift
		Germany: TRGS 903, urine	80 mg/L	acetone	end of exposure or end of shift

### 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: Respiratory protection must be worn whenever the WEL levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product.
- Hand protection: Protective gloves according to EN 374.  
Glove material: Nitrile rubber-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.
- General protection and hygiene measures:  
Do not breathe mist/vapours/spray. Do not get in eyes, on skin, or on clothing.  
Take off contaminated clothing and wash it before reuse.  
Do not eat, drink or smoke when using this product.  
Wash hands thoroughly after handling.  
Work place should be equipped with a shower and an eye rinsing apparatus.

### Environmental exposure controls

Refer to "6.2 Environmental precautions".

## 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, clear
Odour:	characteristic
Odour threshold:	No data available
Melting point/freezing point:	No data available
Initial boiling point and boiling range:	No data available
Flammability:	No data available
Upper/lower flammability or explosive limits:	No data available
Flash point/flash point range:	No data available
Decomposition temperature:	No data available
pH:	1,5
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: approx. 1,12 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

Refer to subsection "Possibility of hazardous reactions".

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No dangerous reactions with proper and specified storage and handling.

### 10.4 Conditions to avoid

Do not mix with other chemicals. Protect from frost.

### 10.5 Incompatible materials

Strong acids and alkalis.

### 10.6 Hazardous decomposition products

No decomposition when used properly.

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): Lack of data.

Acute toxicity (dermal): Lack of data.

Acute toxicity (inhalative): Lack of data.

Skin corrosion/irritation: Lack of data.

Serious eye damage/irritation: Eye Irrit. 2; H319 = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Lack of data.

Effects on or via lactation: Lack of data.

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

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

Aspiration hazard: Lack of data.

### 11.2 Information on other hazards

Endocrine disrupting properties: No data available

Other information: The following applies to Sodium nitrate in general:  
After ingestion: Mucous membrane irritation, nausea, diarrhoea, vomiting.  
After absorption of large quantities: Methaemoglobinaemia with headache, cardiac arrhythmia, drop in blood pressure, dyspnoea, and spasms. Key symptom cyanosis (blue coloured blood).

### Symptoms

In case of inhalation: Electrolytic vapours may form during the electrochemical process.  
May be harmful if inhaled.

In case of ingestion:  
Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.  
After intake of large amounts: stomachache, cough, vomiting with blood.  
After contact with skin: A corrosive effect cannot be ruled out because of the pH value.  
After eye contact: Causes serious eye irritation.  
Reddening, pain. In case of longer contact, danger of serious eye damage.

## SECTION 12: Ecological information

### 12.1 Toxicity

Water Hazard Class: 1 = slightly hazardous to water

### 12.2 Persistence and degradability

Further details: No data available

### 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.  
The following applies to nitrates in general:  
May contribute to the eutrophication of water supplies. Danger to drinking water.

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

**SECTION 14: Transport information****14.1 UN number or ID number**

ADR/RID, IMDG, IATA-DGR: not applicable

**14.2 UN proper shipping name**

ADR/RID, IMDG, IATA-DGR: Not restricted

**14.3 Transport hazard class(es)**

ADR/RID, IMDG, IATA-DGR: not applicable

**14.4 Packing group**

ADR/RID, 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: 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

Technical guidance air: 5.2.5

Information on working limitations:

Observe employment restrictions for young people.

Further regulations, limitations and legal requirements:

No data available

##### National regulations - EC member states

Volatile organic compounds (VOC):

4 % by weight

Further regulations, limitations and legal requirements:

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

Sodium nitrate: Regulation (EU) No 2019/1148 (marketing and use of explosives precursors)

Acetone: Regulation (EU) No 2019/1148 (marketing and use of explosives precursors)

#### 15.2 Chemical Safety Assessment

For this mixture a chemical safety assessment is not required.

### SECTION 16: Other information

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

H225 = Highly flammable liquid and vapour.

H272 = May intensify fire; oxidiser.

H302 = Harmful if swallowed.

H319 = Causes serious eye irritation.

H335 = May cause respiratory irritation.

H336 = May cause drowsiness or dizziness.

EUH066 = Repeated exposure may cause skin dryness or cracking.

Reason of change: General revision

Date of first version: 28.10.2013

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 21

Material number 22.021

Revision date: 21.12.2022

Version: 6.1

Replaces version: 6.0

Language: en-DE

Date of print: 21.12.2022

Page: 9 of 9

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
- EN: European Standard
- EQ: Excepted quantities
- EU: European Union
- Eye Irrit.: Eye irritation
- Flam. Liq.: Flammable liquid
- 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
- MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships
- OEL: Occupational Exposure Limit Value
- OSHA: Occupational Safety and Health Administration
- Ox. Sol.: Oxidising solids
- 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
- STOT SE: Specific target organ toxicity - single exposure
- TLV: Threshold Limit Value
- TRGS: Technical Rules for Hazardous Substances
- vPvB: Very persistent and very bioaccumulative
- WEL: Workplace Exposure Limit

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.