

## Material Safety Data Sheet

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According to 2001/58/EC

**1 - Product and Company Information**

Product Name Electrolyte AE 21  
Product Number 22.021

**Use of the substance/preparation**

Electrolytic marking / Application for Gold & Gold plate, Nickel plate (Brass & Copper), High alloy & Tool steels, Low carbon steels, Titanium, Carbides, Inconel, Monel, Nitraloy, Zirconium, (Tungsten Carbide)

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**2 - Composition/Information on Ingredients**

*Full text of risk phrases appearing in section 2: see section 16.*

INDEX	CAS	EC	Name	Symb.	R:	%
	6484-52-2	229-347-8	Ammonium nitrate	O-Xi	8-36/37/38	<5.0

Chemical characterization Agent:  Preparation:

Description Water-/mineral salt-complex former-mixture.

All other components of this product are not considered hazardous as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200). Therefore identity of the components, are being withheld as trade secrets.

See section 3 for Hazard Identification and Section 8 for exposure limits and controls/personal protection.

**3 - Hazards Identification****SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT**

Causes burns (R34).

**EMERGENCY OVERVIEW**

Electrolyte solution AE 21 is an acidic solution with the pH of 1.5 - 2.5. It may cause skin and eye irritation and possibly damage upon contact. This product is not flammable. However, thermal decomposition may release acrid fumes.

**POTENTIAL HEALTH EFFECTS****EYE CONTACT**

It may cause irritation and/or damage in case of eye contact.

**SKIN CONTACT**

It may cause irritation.

**SKIN ABSORPTION**

A single exposure is not likely to result in the material being absorbed through skin.

**INGESTION**

Ingestion of large quantities of this product may produce gastrointestinal tract irritation and burning sensation, vomiting, cramping, diarrhoea and acidosis.

**INHALATION**

Inhalation of product mist or aerosol may cause irritation of nose and throat, running nose, coughing and chest pain.

**CHRONIC DAMAGE / CARCINOGENICITY / SPECIAL TOXIC EFFECTS**

None expected from normal use of product. However, repeated skin contact may cause irritation and dermatitis.

*This product (or its components) is not listed by NTP, OSHA, and IARC.*

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Pre-existing medical conditions that may be aggravated by exposure include disorders of the skin and respiratory tract including asthma.

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**4 - First Aid Measures****EYE CONTACT**

Immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eyelids to ensure thorough rinsing. Seek medical attention.

**SKIN CONTACT**

Clean exposed skin with warm and soapy water. Remove contaminated clothing. Launder clothing before reuse. Seek medical attention if irritation develops and persists.

**INGESTION**

If swallowed, **DO NOT** induce vomiting. Drink a large volume of cold water or milk and get immediate medical attention. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than hips to prevent aspiration.

**INHALATION**

Remove person to fresh air.

If affected person does not breath, artificial respiration must be applied or give oxygen by trained personnel. If irritation develops and persists, seek medical attention.

**NOTES TO PHYSICIAN**

Institute basic life support measures. Systemic symptoms from acute overexposure to this product are unlikely.

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**5 - Fire Fighting Measures**

Product is a non-flammable liquid. Follow fire-fighting measures appropriate for surrounding materials. Closed containers exposed to extreme heat may rupture due to pressure build up.

<b>Flash Point (Method):</b>	Not flammable
<b>Flammable Limits:</b>	Not flammable
<b>Autoignition Temperature:</b>	Not flammable
<b>Extinguishing Media:</b>	Appropriate for surrounding materials
<b>Special Fire Fighting Procedures:</b>	None
<b>Unusual Fire or Explosion Hazards:</b>	Excessive heat may cause container rupture due to pressure build up.

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**6 - Accidental Release Measures****PRECAUTIONS IF MATERIAL IS SPILLED OR RELEASED**

Stop leak and contain spilled material with absorbent material (Vermiculite and sand fuller's earth). Collect adsorbed product and clean up materials in appropriate container for proper disposal. Move containers from spill area. Larger spills may be neutralised with dilute alkaline solutions of soda ash (Sodium Carbonate) or lime (Calcium Oxide). Prevent materials from entering drains, sewers or waterways.

#### **WASTE DISPOSAL METHODS**

Dispose in accordance with applicable Federal, State and Local regulations.

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### **7 - Handling and Storage**

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#### **STORAGE TEMPERATURE**

Store at room temperature. Avoid freezing and overheating conditions. Freezing and overheating of product may cause container rupture and product spills.

#### **PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Avoid contact with eyes, skin and clothing. Wear eye and skin protection when handling product.

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### **8 - Exposure Controls / Personal Protection**

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#### **EXPOSURE LIMITS**

Not established.

#### **ENGINEERING CONTROLS**

A fresh water supply, including eyewash for emergency first aid, and washing facilities should be readily available.

#### **PERSONAL PROTECTIVE EQUIPMENT**

##### **RESPIRATORY PROTECTION**

Normally not needed in well-ventilated areas. If applicable standards are exceeded or are likely to be exceeded, use a **CEN (EC)** or **NIOSH/MSHA (US)** approved, contaminant-specific, air-purifying respirator. If such concentrations are sufficiently high that this respirator is inadequate or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus **B-P2 (EC)** or **SCBA (US)**. Follow all applicable respirator use, fitting and training standards and regulations.

##### **EYE PROTECTION**

Chemical safety goggles or face shield are required when handling this product.

##### **SKIN**

Gloves, apron or other protective clothing needed to prevent skin contact.

##### **VENTILATION**

Local exhaust ventilation and/or enclosure of the process may be required.

##### **GENERAL HYGIENE MEASURES**

Remove contaminated clothing; launder or dry-clean before reuse. Workers should wash their hands before breaks, meals, smoking and using toilet facilities. Product is readily removed from skin by soap and water.

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### **9 - Physical and Chemical Properties**

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Appearance

Physical State: liquid  
Colour: clear

Odour: slight

Property	Value	At Temperature or Pressure
pH	1.5 - 2.5	
BP/BP Range	100°C (212°F)	
MP/MP Range	0°C (32°F)	
SG/Density	1.06 g/cm <sup>3</sup>	
Vapour pressure	Not determined	
Vapour density	Heavier than air	
% Volatile, by volume	Non-Volatile	
Solubility in water	Completely soluble	
Evaporation Rate	Not determined	

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## 10 - Stability and Reactivity

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### STABILITY

Stability: Stable

Conditions to Avoid: High temperature and strong oxidizer

Materials to Avoid: Strong bases, alkalis, reducing agents, combustibles and oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Although this product is non-flammable, thermal decomposition may release acrid fumes and noxious gases such as oxides of nitrogen and carbon.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur.

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## 11 - Toxicological Information

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Toxicological effects that may be produced by this product are associated with the acidic (pH = 1.5-2.5) nature of this product. Direct contact with product can cause damage to living tissue. The severity of the damage is directly related to the route of exposure as well as to the amount and duration of exposure.

This product contains ammonium nitrate. In the event of severe overexposure, ammonium nitrate may interfere with the ability of the blood to carry oxygen (methemoglobinemia). Symptoms may include headache, weakness, dizziness and a blue color to the skin and lips.

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## 12 - Ecological Information

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Direct contact of product with ecological receptors may cause tissue damage at the point of contact. Product does not bioaccumulate.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Dispose in accordance with Federal, State, and Local regulations. Prevent materials from entering drains, sewers, or waterways. Do not dump on the ground.

### INDUSTRIAL WASTE NUMBER (Waste Key)

11 01 06 (Other acids)

### WASTE DESIGNATION

Electrolyte

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## 14 - Transport Information

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RID/ADR/DOT Ground Transportation

IMDG Ocean/River Transportation

IATA Air Transportation

UN#: Not applicable

Class: Not applicable

PG: Not applicable

Proper Shipping Name: Not regulated by RID/ADR/DOT/IATA

Labels: Not required

Placards: Not applicable

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: C

Corrosive

R-PHRASES: 34

Causes burns.

S-PHRASES: 23-24/25-26-37/39-45

Do not inhale vapour. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### NATIONAL REGULATIONS

Employment Restriction: not approved

Statutory order on hazardous incidents: not approved

Classification accord. to VbF: N/A

Technical Instructions on

Air Quality: not approved

German Water Pollution Class: WGK 1 - low hazardous to water (Self assessment according to VwVwS)

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## 16 - Other Information

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### List of relevant R phrases (heading 2):

R8: Contact with combustible material may cause fire.

R36/37/38: Irritating to eyes, respiratory system and skin.

### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Schilling Marking Systems GmbH, shall not be held liable for any damage resulting from handling or from contact with the above product. Naturally we assure efficient quality of our products on the requirements of our General sales- and delivery conditions. Copyright (2006): Schilling Marking Systems GmbH. License granted to make unlimited paper copies for internal use only.

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