SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name: ELECTROLYTE A3-I
Cat. No. 40900012 (part of 40900011)

Container size: 960 ml

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

Application: For electrolytic preparation of metallographic specimens.
Uses advised against: No specific uses advised against are identified. (*)

1.3. Details of the supplier of the safety data sheet

Supplier: Struers ApS
Pederstrupvej 84
DK-2750 Ballerup
Tel:+45 44 600 800

Responsible for safety data sheet authoring: Responsible for safety data sheet authoring: DHI
Any questions to the contents of this safety data sheet should be sent to: struers@struers.dk

1.4. Emergency telephone number

NHS: 111

+45 44 600 800
(Only during office hours)
SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP:
- Flam. Liq. 2;H225
- Acute Tox. 3;H301
- Acute Tox. 3;H311
- Acute Tox. 3;H331
- Skin Irrit. 2;H315
- Eye Irrit. 2;H319
- STOT SE 1;H370

2.2. Label elements

(*)

Danger

Contains:
- Methanol
- 2-Butoxyethanol

H225 Highly flammable liquid and vapour.
H301 + H311 +H331 Toxic if swallowed, in contact with skin or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H370 Causes damage to organs.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

2.3. Other hazards

The product is highly flammable, and explosive vapours/air mixtures may be formed even at normal room temperatures. Lethal dose for an adult person: approx. 30-250 ml (Methanol). Organic solvents may be absorbed into the body by inhalation, skin contact and ingestion and cause permanent damage to the nervous system, including the brain.

PBT/vPvB: No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

The product contains: organic solvents.
SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital.

Inhalation: Move injured person into fresh air and keep person calm under observation. If necessary, seek hospital and bring these instructions. Unconscious persons must be locked on their side, head low and kept warm. CALL AN AMBULANCE. Bring along these instructions to the hospital.

Skin contact: Flush immediately with plenty of water and remove contaminated clothing. Call an ambulance, continue to rinse during transportation to hospital and bring these instructions.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. Remove any contact lenses and open eyelids widely. If irritation persists: Continue flushing during transport to hospital. Bring along these instructions.

Ingestion: Immediately rinse mouth and drink plenty of water. Induce vomiting, if person is conscious. Rinse mouth again and drink 1-2 glasses of water and 40 ml ethanol (liqueur). Immediate transportation to hospital. Bring along these instructions.

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

Symptoms/effects: See section 11 for more detailed information on health effects and symptoms.

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

Medical attention/treatments: Treat symptomatically.
SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Extinguishing media: Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
Specific hazards: The product is flammable, and heating may generate vapours which may form explosive vapour/air mixtures. Vapours are heavier than air and may travel along the floor and in the bottom of containers. Vapours may be ignited by a spark, a hot surface or an ember.

5.3. Advice for firefighters
Protective equipment for firefighters: Use air-supplied respirator, gloves and protective goggles.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel: Do not smoke or use open fire, or other sources of ignition. Avoid inhalation of vapours and contact with skin and eyes. For personal protection, see section 8.

For emergency responders: No specific recommendations. For personal protection, see section 8.

6.2. Environmental precautions
Environmental precautions: Avoid discharge into water courses or onto the ground.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Remove sources of ignition. Cover large spillages with foam. Dam and absorb spillages with sand, earth or other non-combustible material. Do not use sawdust or other combustible material.

6.4. Reference to other sections
References: For personal protection, see section 8. For waste disposal, see section 13.
SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling advice: Avoid inhalation of vapours and contact with skin and eyes. Observe good chemical hygiene practices.

Technical measures: Do not smoke or use open fire or other sources of ignition. Wash hands before breaks and before smoking, eating or drinking.

Technical precautions: Provide easy access to water supply or an emergency shower.

7.2. Conditions for safe storage, including any incompatibilities


Storage conditions: Store in locked poison cupboard/room. Store in a cool and well-ventilated place. Avoid contact with oxidising agents. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

Specific use(s): No information available.
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

<table>
<thead>
<tr>
<th>CAS-No.:</th>
<th>Chemical name</th>
<th>As:</th>
<th>Exposure limits:</th>
<th>Type:</th>
<th>Notes:</th>
<th>References:</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-56-1</td>
<td>Methanol</td>
<td>-</td>
<td>200 ppm, 266 mg/m³</td>
<td>TWA</td>
<td>Sk</td>
<td>EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>250 ppm, 333 mg/m³</td>
<td>STEL</td>
<td>Sk; 15min</td>
<td></td>
</tr>
<tr>
<td>111-76-2</td>
<td>2-Butoxyethanol</td>
<td>-</td>
<td>25 ppm, 123 mg/m³</td>
<td>TWA</td>
<td>Sk</td>
<td>EH40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td>50 ppm, 246 mg/m³</td>
<td>STEL</td>
<td>Sk; 15min</td>
<td></td>
</tr>
</tbody>
</table>

Notes: Sk: Can be absorbed through skin.

8.2. Exposure controls

Engineering measures: Provide adequate ventilation. Observe occupational exposure limits and minimise the risk of inhalation of vapours. Provide access to washing facilities including soap, skin cleanser and fatty cream.

Personal protection: Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Respiratory equipment: In case of inadequate ventilation and work of brief duration, use suitable respiratory equipment. Use respiratory equipment with gas filter, type AX.

Hand protection: Wear protective gloves. Butyl rubber gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material. (*)

Eye protection: Risk of splashes: Wear goggles/face shield.

Skin protection: Wear apron or protective clothing in case of splashes.

Hygiene measures: Wash hands after handling.

Environmental Exposure Controls: Not available.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Form: Liquid.
Colour: Clear.
Odour: odour of alcohol
Odour threshold: Not available.
\(\text{pH}\): Not available.
Melting point: Not available.
Boiling point: 65°C
Flash point: 10°C
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Explosive limits: 5.5-26.5 %
Vapour pressure: Not available.
Vapour density: Not available.
Relative density: 0.82
Solubility: Miscible with water.
Partition coefficient (n-octanol/water): Not available.
Auto-ignition temperature (°C): Not available.
Decomposition temperature (°C): Not available.
Viscosity: Not available.
Explosive properties: Not available.
Oxidising properties: Not available.

9.2. Other information

Other data: Volatile Organic Compound (VOC): 800 g/l (calculated)
## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

**Reactivity:** No data available.

### 10.2. Chemical stability

**Stability:** Stable under normal temperature conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous Reactions:** No data available.

### 10.4. Conditions to avoid

**Conditions/materials to avoid:** Avoid exposing to heat and contact with strong oxidising substances.

### 10.5. Incompatible materials

**Incompatible materials:** No information available.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products:** When heated, vapours/gases hazardous to health may be formed.
### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity (Oral)</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>Acute Toxicity (Dermal)</td>
<td>Toxic in contact with skin.</td>
</tr>
<tr>
<td>Acute Toxicity (Inhalation)</td>
<td>Toxic if inhaled.</td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>STOT - Single exposure</td>
<td>Causes damage to organs.</td>
</tr>
<tr>
<td>STOT - Repeated exposure</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Vapours may irritate throat and respiratory system and cause coughing. Vapours have a narcotic effect and may cause headache, fatigue, dizziness and nausea. In serious cases, unconsciousness and permanent damage to the nervous system, including the brain, and liver may be seen.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Contains components which may penetrate the skin.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Even small amounts (30-250 ml methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder and blindness. Furthermore, ingestion may lead to the same symptoms as when inhaled. Note: Ethanol acts against methanol poisoning.</td>
</tr>
<tr>
<td>Specific effects</td>
<td>Frequent inhalation of even small concentrations may cause irritability, fatigue and memory failure and eventually permanent damage to the nervous system, including the brain. The product contains butoxyethanol which is suspected of having harmful longterm effects on the kidneys and nervous system. In serious cases absorption of methanol in the body may lead to damage to the eyesight.</td>
</tr>
</tbody>
</table>
SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity: The product is not expected to be hazardous to the environment.

12.2. Persistence and degradability
Degradability: The product is easily biodegradable.

12.3. Bioaccumulative potential
Bioaccumulative potential: The product is not bioaccumulating.

12.4. Mobility in soil
Mobility: No data available.

12.5. Results of PBT and vPvB assessment
PBT/vPvB: No information available.

12.6. Other adverse effects
Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods
Waste from residues: Dispose of waste and residues in accordance with local authority requirements.
Waste is classified as hazardous waste.

EWC-code: 16 05 08
READY-TO-USE MIXTURE:
EWC-code: 16 05 06

Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements.
SECTION 14: TRANSPORT INFORMATION

The product is covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number
UN-No: 1992

14.2. UN proper shipping name
Proper Shipping Name: FLAMMABLE LIQUID, TOXIC, N.O.S. (Methanol)

Additional IMDG information:
EmS: F-E, S-D
MFAG: 19

14.3. Transport hazard class(es)
Class: 3 (6.1)

14.4. Packing group
PG: II

14.5. Environmental hazards
Marine pollutant: No.
Environmentally Hazardous substance: No.

14.6. Special precautions for user
Special precautions: None known.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code
Transport in bulk: Not relevant.
SECTION 15: REGULATORY INFORMATION

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

Special provisions: As a general rule, persons under 18 years of age are not allowed to work with this product. Users must be carefully instructed in the proper work procedure, the dangerous properties of the product and the necessary safety instructions.

The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.
The Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242), with amendments.

15.2. Chemical Safety Assessment

CSA status: No chemical safety assessment has been carried out.
SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions. The following sections contain revisions or new statements: 1, 2, 8. The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Abbreviations and acronyms used in the safety data sheet:
PBT = Persistent, Bioaccumulative and Toxic.
vPvB = very Persistent and very Bioaccumulative.

Additional information: Classification according to Regulation (EC) No. 1272/2008: Calculation method.

Wording of H-statements:

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H370 Causes damage to organs.

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.

Made by DHI - Environment and Toxicology, Agern Allé 5, DK-2970 Hørsholm, Denmark.