# SAFETY DATA SHEET

ELECTROLYTE A2-I

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

### 1.1 Product identifier

**Product name** : ELECTROLYTE A2-I

**UFI** : HE03-3070-A00H-JGCR

**Cat. No.** : 40900008, 40900009

**Container size** : 920 ml

**Product type** : Liquid.

**Other means of identification** : Not available.

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

**Product use** : For electrolytic polishing of metallographic preparations

**Area of application** : Professional applications.

| Uses advised against |
|---|
| None identified. |

### 1.3 Details of the supplier of the safety data sheet

Struers ApS
Pederstrupvej 84
DK-2750 Ballerup
Telephone:+4544600800

**e-mail address of person responsible for this SDS** : sdsquestions@struers.dk

### 1.4 Emergency telephone number

**National advisory body/Poison Centre**

**Telephone number** : 01809 2166 - 8am-10pm, 7d/7

**Supplier**

**Telephone number** : +45 44 600 800 (Only during office hours)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : Mixture

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

Flam. Liq. 2, H225
Skin Irrit. 2, H315
Eye Irrit. 2, H319

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

# SECTION 2: Hazards identification

## 2.2 Label elements

**Hazard pictograms** :

**Signal word** : Danger

**Hazard statements** : H225 - Highly flammable liquid and vapour.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.

**Precautionary statements**

**Prevention** : P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264 - Wash thoroughly after handling.

**Response** : P302 + P352 - IF ON SKIN: Wash with plenty of water.
P362 + P364 - Take off contaminated clothing and wash it before reuse.

**Storage** : Not applicable.

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements** : Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : Not applicable.

**Special packaging requirements**

**Containers to be fitted with child-resistant fastenings** : Not applicable.

**Tactile warning of danger** : Not applicable.

## 2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII** : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Product meets the criteria for endocrine disrupting properties according to Regulation (EC) No. 1907/2006.** : No.

**Other hazards which do not result in classification** : None known.

## SECTION 3: Composition/information on ingredients

**3.2 Mixtures** : Mixture

| Product/ingredient name | Identifiers | % | Classification | Specific Conc. Limits, M-factors and ATEs | Type |
|---|---|---|---|---|---|
| ethanol | REACH #: 01-2119457610-43<br>EC: 200-578-6<br>CAS: 64-17-5<br>Index: 603-002-00-5 | ≥75 - ≤90 | Flam. Liq. 2, H225<br>Eye Irrit. 2, H319 | - | [1] [2] |
| 2-butoxyethanol | REACH #: 01-2119475108-36<br>EC: 203-905-0<br>CAS: 111-76-2<br>Index: 603-014-00-0 | ≥10 - ≤20 | Acute Tox. 4, H302<br>Acute Tox. 3, H331<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>**See Section 16 for the full text of the H statements declared above.** | ATE [Oral] = 1200 mg/kg<br>ATE [Inhalation (vapours)] = 4.35 mg/l | [1] [2] |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## SECTION 4: First aid measures

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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

**Over-exposure signs/symptoms**

**Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
irritation
redness

**Ingestion** : No specific data.

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

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** : Use dry chemical, $CO_2$, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

### 5.2 Special hazards arising from the substance or mixture

**Hazards from the substance or mixture** : Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

### 5.3 Advice for firefighters

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

# SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.2 Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### 6.3 Methods and material for containment and cleaning up

**Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Dispose of via a licensed waste disposal contractor.

**Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

# SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2 Conditions for safe storage, including any incompatibilities

## SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidising materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**Seveso Directive - Reporting thresholds (in tonnes)**

**Danger criteria**

| Category | Notification and MAPP threshold | Safety report threshold |
|---|---|---|
| P5c | 5000 tonnes | 50000 tonnes |

### 7.3 Specific end use(s)

**Recommendations** : Not available.

**Industrial sector specific solutions** : Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational exposure limits**

| Product/ingredient name | Exposure limit values |
|---|---|
| ethanol | **NAOSH (Ireland, 4/2024)** Notes: Advisory Occupational Exposure Limit Values (OELVs)<br>OELV 15 minutes: 1000 ppm. |
| 2-butoxyethanol | **NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values<br>OELV 8 hours: 20 ppm.<br>OELV 8 hours: 98 mg/m³.<br>OELV 15 minutes: 50 ppm.<br>OELV 15 minutes: 246 mg/m³.<br>**EU OEL (Europe, 1/2022)** Absorbed through skin.<br>TWA 8 hours: 20 ppm.<br>TWA 8 hours: 98 mg/m³.<br>STEL 15 minutes: 50 ppm.<br>STEL 15 minutes: 246 mg/m³. |

**Biological exposure indices**

| Product/ingredient name | Exposure indices |
|---|---|
| 2-butoxyethanol | **NAOSH BGVs (Ireland, 1/2011)**<br>BMGV: 200 mg/g creatinine, BAA [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases. |

**Recommended monitoring procedures** : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be

## SECTION 8: Exposure controls/personal protection

required.

**DNELs/DMELs**

| Product/ingredient name | Result | |
|---|---|---|
| ethanol | **DNEL - Workers - Long term - Inhalation**<br>380 mg/m³ | Effects: Systemic |
| | **DNEL - General population - Long term - Oral**<br>87 mg/kg bw/day | Effects: Systemic |
| | **DNEL - General population - Long term - Inhalation**<br>114 mg/m³ | Effects: Systemic |
| | **DNEL - General population - Long term - Dermal**<br>206 mg/kg bw/day | Effects: Systemic |
| | **DNEL - Workers - Long term - Dermal**<br>343 mg/kg bw/day | Effects: Systemic |
| | **DNEL - General population - Short term - Inhalation**<br>950 mg/m³ | Effects: Local |
| | **DNEL - Workers - Short term - Inhalation**<br>1900 mg/m³ | Effects: Local |
| 2-butoxyethanol | **DNEL - General population - Long term - Oral**<br>6.3 mg/kg bw/day | Effects: Systemic |
| | **DNEL - General population - Short term - Oral**<br>26.7 mg/kg bw/day | Effects: Systemic |
| | **DNEL - General population - Long term - Inhalation**<br>59 mg/m³ | Effects: Systemic |
| | **DNEL - Workers - Long term - Inhalation**<br>98 mg/m³ | Effects: Systemic |
| | **DNEL - General population - Short term - Inhalation**<br>147 mg/m³ | Effects: Local |
| | **DNEL - Workers - Short term - Inhalation**<br>246 mg/m³ | Effects: Local |
| | **DNEL - General population - Short** | Effects: Systemic |

## SECTION 8: Exposure controls/personal protection

**term - Inhalation**
426 mg/m³

**DNEL - Workers - Short term - Inhalation** — Effects: Systemic
1091 mg/m³

**DNEL - Workers - Short term - Dermal** — Effects: Systemic
89 mg/kg bw/day

**DNEL - Workers - Long term - Dermal** — Effects: Systemic
125 mg/kg bw/day

**DNEL - General population - Short term - Dermal** — Effects: Systemic
75 mg/kg bw/day

**PNECs**

| Product/ingredient name | Result |
|---|---|
| ethanol | **Fresh water**<br>0.96 mg/l<br><br>**Marine water**<br>0.79 mg/l<br><br>**Fresh water sediment**<br>3.6 mg/kg dwt<br><br>**Soil**<br>0.63 mg/kg dwt<br><br>**Marine water sediment**<br>2.9 mg/kg dwt<br><br>**Sewage Treatment Plant**<br>580 mg/l |
| 2-butoxyethanol | **Marine water sediment**<br>3.46 mg/kg<br><br>**Fresh water sediment**<br>34.6 mg/kg<br><br>**Fresh water**<br>8.8 mg/l<br><br>**Marine water**<br>0.88 mg/l<br><br>**Soil**<br>2.33 mg/kg dwt<br><br>**Sewage Treatment Plant**<br>463 mg/l |

# SECTION 8: Exposure controls/personal protection

## 8.2 Exposure controls

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Individual protection measures**

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin protection**

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Recommended: Butyl rubber gloves. The breakthrough time must be greater than the end use time of the product.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: multi-gas/vapour filter: A2

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

# SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

## 9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state** : Liquid.

**Colour** : Colourless.

**Odour** : Alcohol-like.

**Odour threshold** : Not available.

**Melting point/freezing point** : Not available.

**Boiling point or initial boiling point and boiling range** : 85°C

**Flammability** : Not available.

**Lower and upper explosion limit** : Lower: 2%
Upper: 12%

**Flash point** : Closed cup: 12°C

**Auto-ignition temperature** :

| Ingredient name | °C | Method |
|---|---|---|
| 2-butoxyethanol | 230 | DIN 51794 |

**Decomposition temperature** : Not available.

**pH** : Not applicable.

**Viscosity** : Dynamic (room temperature): Not available.
Kinematic (room temperature): 3.57 $mm^2/s$
Kinematic (40°C): Not available.

**Solubility** :

| Media | Result |
|---|---|
| water | Soluble |

**Solubility in water** : Not available.

**Partition coefficient n-octanol/water (log Pow)** : Not applicable.

**Vapour pressure** :

| Ingredient name | Vapour Pressure at 20˚C | | | Vapour pressure at 50˚C | | |
|---|---|---|---|---|---|---|
| | mm Hg | kPa | Method | mm Hg | kPa | Method |
| ethanol | 42.94865 | 5.7 | | | | |

**Relative density** : 0.83

**Relative vapour density** : Not available.

**Particle characteristics**

**Median particle size** : Not applicable.

## 9.2 Other information

### 9.2.1 Information with regard to physical hazard classes

**Explosive properties** : Not available.

**Oxidising properties** : Not available.

### 9.2.2 Other safety characteristics

## SECTION 9: Physical and chemical properties

**Miscible with water** : Yes.

## SECTION 10: Stability and reactivity

**10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**10.2 Chemical stability** : The product is stable.

**10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.

**10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**10.5 Incompatible materials** : Reactive or incompatible with the following materials:
oxidising materials

**10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

**Acute toxicity**

| Product/ingredient name | Result | |
|---|---|---|
| ethanol | **Rat - Oral - LD50**<br>7060 mg/kg | Toxic effects: Lung, Thorax, or Respiration - Other changes |
| | **Rabbit - Dermal - LD50**<br>>15800 mg/kg | |
| | **Rat - Inhalation - LC50 Vapour**<br>124700 mg/m³ [4 hours] | |
| 2-butoxyethanol | **Rat - Oral - LD50**<br>917 mg/kg | Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes Blood - Other hemolysis with or without anemia |
| | **Rat - Inhalation - LC50 Vapour**<br>4.35 mg/l [4 hours] | |

**Conclusion/Summary [Product]** : Not available.

**Acute toxicity estimates**

## SECTION 11: Toxicological information

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|---|---|---|---|---|
| ELECTROLYTE A2-I | 11191.1 | N/A | N/A | 40.6 | N/A |
| ethanol | 7060 | N/A | N/A | 124.7 | N/A |
| 2-butoxyethanol | 1200 | N/A | N/A | 4.35 | N/A |

**Skin corrosion/irritation**

| Product/ingredient name | Result | |
|---|---|---|
| ethanol | **Rabbit - Skin - Not irritant** | OECD 404 [Acute Dermal Irritation/ Corrosion] |
| 2-butoxyethanol | **Rabbit - Skin - Mild irritant**<br>Amount/concentration applied: 500 mg | |

**Conclusion/Summary [Product]** : Not available.

**Serious eye damage/eye irritation**

| Product/ingredient name | Result |
|---|---|
| ethanol | **Rabbit - Eyes - Mild irritant**<br>Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 500 mg<br><br>**Rabbit - Eyes - Moderate irritant**<br>Duration of treatment/exposure: 0.066666667 minutes<br>Amount/concentration applied: 100 mg<br><br>**Rabbit - Eyes - Moderate irritant**<br>Amount/concentration applied: 100 uL<br><br>**Rabbit - Eyes - Severe irritant**<br>Amount/concentration applied: 500 mg<br><br>**Rabbit - Eyes - Mild irritant**<br>Duration of treatment/exposure: 1 hours<br>Amount/concentration applied: 50 pph |
| 2-butoxyethanol | **Rabbit - Eyes - Moderate irritant**<br>Duration of treatment/exposure: 24 hours<br>Amount/concentration applied: 100 mg<br><br>**Rabbit - Eyes - Severe irritant**<br>Amount/concentration applied: 100 mg |

**Conclusion/Summary [Product]** : Not available.

**Respiratory corrosion/irritation**

## SECTION 11: Toxicological information

**Conclusion/Summary [Product]** : Not available.

**Respiratory or skin sensitization**

**Skin**

**Conclusion/Summary [Product]** : Not available.

**Respiratory**

**Conclusion/Summary [Product]** : Not available.

**Germ cell mutagenicity**

**Conclusion/Summary [Product]** : Not available.

**Carcinogenicity**

**Conclusion/Summary [Product]** : Not available.

**Reproductive toxicity**

**Conclusion/Summary [Product]** : Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

**Information on likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

**Potential acute health effects**

**Eye contact** : Causes serious eye irritation.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Causes skin irritation.

**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

## SECTION 11: Toxicological information

**Inhalation** : No specific data.

**Skin contact** : Adverse symptoms may include the following:
irritation
redness

**Ingestion** : No specific data.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Short term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

**Conclusion/Summary [Product]** : Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

### 11.2 Information on other hazards

#### 11.2.1 Endocrine disrupting properties

Not available.

**Conclusion/Summary [Product]** : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

#### 11.2.2 Other information

Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name | Result | |
|---|---|---|
| ethanol | **Acute - EC50 - Fresh water**<br>Fish - Fathead minnow - *Pimephales promelas*<br>Age: 31 days; Size: 22 mm; Weight: 0.14 g<br>12.8 g/l [96 hours] | Effect: Behavior |
| | **Acute - EC50**<br>Daphnia - *Daphnia magna*<br>12340 mg/l [48 hours] | |
| | **Acute - EC50**<br>Algae - *Chlorella vulgaris)*<br>275 mg/l [72 hours] | |

## SECTION 12: Ecological information

2-butoxyethanol

**Acute - EC50**
Algae - *Pseudokirchnerella subcapitata*
1840 mg/l [72 hours]

**Acute - EC50**
Daphnia - *Daphnia magna*
1550 mg/l [48 hours]

**Acute - EC50**
Fish - *Oncorhynchus mykiss*
1474 mg/l [96 hours]

**Conclusion/Summary [Product]** : Not available.

### 12.2 Persistence and degradability

| Product/ingredient name | Result |
|---|---|
| ethanol | 84% [20 days] - Readily |

**Conclusion/Summary [Product]** : Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---|---|---|---|
| ELECTROLYTE A2-I | - | - | Readily |
| ethanol | - | - | Readily |
| 2-butoxyethanol | - | - | Readily |

### 12.3 Bioaccumulative potential

| Product/ingredient name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| ethanol | -0.35 | - | Low |
| 2-butoxyethanol | 0.81 | - | Low |

### 12.4 Mobility in soil

**Soil/water partition coefficient**

| Product/ingredient name | logKoc | Koc |
|---|---|---|
| ethanol | 0.2 | 1.59008 |
| 2-butoxyethanol | 1.8 | 67.3685 |

**Results of PMT and vPvM assessment**

| Product/ingredient name | PMT | P | M | T | vPvM | vP | vM |
|---|---|---|---|---|---|---|---|
| ethanol | No | N/A | Yes | No | N/A | N/A | Yes |
| 2-butoxyethanol | No | N/A | Yes | No | N/A | N/A | Yes |

**Mobility** : Not available.

**Conclusion/Summary** : The product does not meet the criteria to be considered as a PMT or vPvM.

### 12.5 Results of PBT and vPvB assessment

**Regulation (EC) No. 1907/2006 [REACH]**

## SECTION 12: Ecological information

| Product/ingredient name | PBT | P | B | T | vPvB | vP | vB |
|---|---|---|---|---|---|---|---|
| ethanol | No | N/A | N/A | No | N/A | N/A | N/A |
| 2-butoxyethanol | No | N/A | N/A | No | N/A | N/A | N/A |

**Regulation (EC) No. 1272/2008 [CLP]**

| Product/ingredient name | PBT | P | B | T | vPvB | vP | vB |
|---|---|---|---|---|---|---|---|
| ethanol | No | N/A | N/A | No | N/A | N/A | N/A |
| 2-butoxyethanol | No | N/A | N/A | No | N/A | N/A | N/A |

**Conclusion/Summary Regulation (EC) No. 1272/2008 [CLP]** : The product does not meet the criteria to be considered as a PBT or vPvB.

### 12.6 Endocrine disrupting properties

Not available.

**Conclusion/Summary [Product]** : The product does not meet the criteria to be considered as having endocrine disrupting properties according to the criteria set out in either Regulation (EC) No. 1907/2006 or Regulation (EC) No 1272/2008.

### 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

**Product**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : Yes.

**European waste catalogue (EWC)**

| Waste code | Waste designation |
|---|---|
| 16 05 06* | laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals |
| 16 05 08* | discarded organic chemicals consisting of or containing hazardous substances |

**Packaging**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

| Type of packaging | European waste catalogue (EWC) | |
|---|---|---|
| Plastic bottles or jugs | 15 01 02 | plastic packaging |

## SECTION 13: Disposal considerations

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|---|---|---|---|---|
| **14.1 UN number or ID number** | UN1987 | UN1987 | UN1987 | UN1987 |
| **14.2 UN proper shipping name** | ALCOHOLS, N.O.S. (ethanol, mixture) | ALCOHOLS, N.O.S. (ethanol, mixture) | ALCOHOLS, N.O.S. (ethanol, mixture) | Alcohols, n.o.s. (ethanol, mixture) |
| **14.3 Transport hazard class(es)** | 3 | 3 | 3 | 3 |
| **14.4 Packing group** | II | II | II | II |
| **14.5 Environmental hazards** | No. | No. | No. | No. |

**Additional information**

**ADR/RID** : **Hazard identification number** 33
**Limited quantity** 1 L
**Special provisions** 601, 274, 640C
**Tunnel code** (D/E)

**ADN** : **Special provisions** 274, 601, 640C

**IMDG** : **Emergency schedules** F-E, S-D
**Special provisions** 274

**IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 5 L. Packaging instructions: 353. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
**Special provisions** A3, A180

**14.6 Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Maritime transport in bulk according to IMO instruments** : Not available.

# SECTION 15: Regulatory information

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

### EU Regulation (EC) No. 1907/2006 (REACH)

#### Annex XIV - List of substances subject to authorisation

##### Annex XIV

None of the components are listed.

##### Substances of very high concern

None of the components are listed.

#### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

| Product/ingredient name | % | Designation [Usage] |
|---|---|---|
| ELECTROLYTE A2-I | ≥90 | 3 |

**Labelling** : Not applicable.

### Other EU regulations

**Explosive precursors** : Not applicable.

#### Ozone depleting substances (EU 2024/590)

Not listed.

#### Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

#### Persistent Organic Pollutants

Not listed.

#### Seveso Directive

This product is controlled under the Seveso Directive.

##### Danger criteria

| Category |
|---|
| P5c |

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

**15.2 Chemical safety assessment** : The supplier has not performed a chemical safety assessment for the substance/product.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
B = Bioaccumulative
BCF = Bioconcentration Factor
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
IATA = International Air Transport Association
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
M = Mobile
N/A = Not available
P = Persistent
PBT = Persistent, Bioaccumulative and Toxic
PMT = Persistent, Mobile and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SGG = Segregation Group
T = Toxic
vB = Very Bioaccumulative
vM = Very Mobile
vP = Very Persistent
vPvB = Very Persistent and Very Bioaccumulative
vPvM = Very Persistent and Very Mobile

**Key literature references and sources for data** : Regulation (EC) No. 1272/2008 [CLP]; European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), concluded in Geneva on 30 September 1957 plus amendments (Uniform text: Journal of Laws 27/2009 pos. 162 plus amendments); European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN); Occupational exposure limits; International regulations

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

| Classification | Justification |
|---|---|
| Flam. Liq. 2, H225 | On basis of test data |
| Skin Irrit. 2, H315 | Calculation method |
| Eye Irrit. 2, H319 | Calculation method |

**Full text of abbreviated H statements**

| | |
|---|---|
| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |

**Full text of classifications [CLP/GHS]**

## SECTION 16: Other information

| | |
|---|---|
| Acute Tox. 3 | ACUTE TOXICITY - Category 3 |
| Acute Tox. 4 | ACUTE TOXICITY - Category 4 |
| Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Flam. Liq. 2 | FLAMMABLE LIQUIDS - Category 2 |
| Skin Irrit. 2 | SKIN CORROSION/IRRITATION - Category 2 |

**Training advice** : Ensure operatives are trained to minimise exposures. Training staff on good practice.

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**Version** : 3

**Notice to reader**

**To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.**
**Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.**