SAFETY DATA SHEET

ELECTROLYTE A3-I

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

1.1 Product identifier

Product name : ELECTROLYTE A3-I

UFI : E533-909Q-400C-QE0T

Cat. No. : 40900011, 40900012

Container size : 960 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
Acute Tox. 3, H301
Acute Tox. 3, H311
Acute Tox. 3, H331
Skin Irrit. 2, H315
Eye Irrit. 2, H319
STOT SE 1, H370

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

SECTION 2: Hazards identification

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.

2.2 Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : 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.

Precautionary statements

Prevention : P280 - Wear protective gloves and protective clothing. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 - Do not breathe vapour.

Response : P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

Storage : Not applicable.

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

Hazardous ingredients : methanol

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.

SECTION 2: Hazards identification

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
methanol	REACH #: 01-2119433307-44 EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	≥50 - ≤75	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370	ATE [Oral] = 100 mg/kg ATE [Dermal] = 300 mg/kg ATE [Inhalation (vapours)] = 3 mg/l STOT SE 1, H370: C ≥ 10% STOT SE 2, H371: 3% ≤ C < 10%	[1] [2]
2-butoxyethanol	REACH #: 01-2119475108-36 EC: 203-905-0 CAS: 111-76-2 Index: 603-014-00-0	≥25 - ≤50	Acute Tox. 4, H302 Acute Tox. 3, H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 **See Section 16 for the full text of the H statements declared above.**	ATE [Oral] = 1200 mg/kg 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. If necessary, call a poison center or physician.

SECTION 4: First aid measures

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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 : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. 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. 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.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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. Do not breathe 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.

SECTION 6: Accidental release measures

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 get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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

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. Store locked up. 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
H2	50 tonnes	200 tonnes
H3	50 tonnes	200 tonnes
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
methanol	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 200 ppm. OELV 8 hours: 260 mg/m³. **EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 200 ppm. TWA 8 hours: 260 mg/m³.
2-butoxyethanol	**NAOSH (Ireland, 4/2024)** Absorbed through skin. Notes: EU derived Occupational Exposure Limit Values OELV 8 hours: 20 ppm. OELV 8 hours: 98 mg/m³. OELV 15 minutes: 50 ppm. OELV 15 minutes: 246 mg/m³. **EU OEL (Europe, 1/2022)** Absorbed through skin. TWA 8 hours: 20 ppm. TWA 8 hours: 98 mg/m³. STEL 15 minutes: 50 ppm. STEL 15 minutes: 246 mg/m³.

Biological exposure indices

Product/ingredient name	Exposure indices
methanol	**NAOSH BGVs (Ireland, 1/2011)** BMGV: 15 mg/l, methanol [in urine]. Sampling time: end of shift - As soon as possible after exposure ceases.
2-butoxyethanol	**NAOSH BGVs (Ireland, 1/2011)** 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 required.

DNELs/DMELs

Product/ingredient name	Result	
methanol	**DNEL - General population - Short term - Oral** 4 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Oral 4 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Short	Effects: Systemic

SECTION 8: Exposure controls/personal protection

	term - Dermal 4 mg/kg bw/day	
	DNEL - General population - Long term - Dermal 4 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Short term - Dermal 20 mg/kg bw/day	Effects: Systemic
	DNEL - Workers - Long term - Dermal 20 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Short term - Inhalation 26 mg/m³	Effects: Local
	DNEL - General population - Long term - Inhalation 26 mg/m³	Effects: Local
	DNEL - General population - Short term - Inhalation 26 mg/m³	Effects: Systemic
	DNEL - General population - Long term - Inhalation 26 mg/m³	Effects: Systemic
	DNEL - Workers - Short term - Inhalation 130 mg/m³	Effects: Local
	DNEL - Workers - Long term - Inhalation 130 mg/m³	Effects: Local
	DNEL - Workers - Short term - Inhalation 130 mg/m³	Effects: Systemic
	DNEL - Workers - Long term - Inhalation 130 mg/m³	Effects: Systemic
2-butoxyethanol	**DNEL - General population - Long term - Oral** 6.3 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Short term - Oral 26.7 mg/kg bw/day	Effects: Systemic
	DNEL - General population - Long term - Inhalation	Effects: Systemic

SECTION 8: Exposure controls/personal protection

59 mg/m³

DNEL - Workers - Long term - Inhalation — Effects: Systemic
98 mg/m³

DNEL - General population - Short term - Inhalation — Effects: Local
147 mg/m³

DNEL - Workers - Short term - Inhalation — Effects: Local
246 mg/m³

DNEL - General population - Short term - Inhalation — Effects: Systemic
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
methanol	**Marine water** 2.08 mg/l **Fresh water** 20 mg/l **Marine water sediment** 7.7 mg/kg dwt **Soil** 100 mg/kg wwt
2-butoxyethanol	**Marine water sediment** 3.46 mg/kg **Fresh water sediment** 34.6 mg/kg **Fresh water** 8.8 mg/l

SECTION 8: Exposure controls/personal protection

Marine water
0.88 mg/l

Soil
2.33 mg/kg dwt

Sewage Treatment Plant
463 mg/l

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: organic vapour filter (Type AX)/ organic vapour filter (Type A): Brown.

SECTION 8: Exposure controls/personal protection

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 : 65°C

Flammability : Not available.

Lower and upper explosion limit : Lower: 5.5%
Upper: 26.5%

Flash point : Closed cup: 10°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): 3.6 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
methanol	126.96329	16.9				

Relative density : 0.82

Relative vapour density : Not available.

Particle characteristics

Median particle size : Not applicable.

SECTION 9: Physical and chemical properties

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

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
methanol	**Rabbit - Dermal - LD50** 15800 mg/kg **Rat - Oral - LD50** 5600 mg/kg **Rat - Inhalation - LC50 Vapour** 64000 ppm [4 hours] **Rat - Inhalation - LC50 Vapour** 145000 ppm [1 hours] **Rat - Inhalation - LC50 Vapour** 83.84 mg/l [4 hours] **Rat - Inhalation - LC50 Vapour** 189.95 mg/l [1 hours]

SECTION 11: Toxicological information

2-butoxyethanol	**Rat - Oral - LD50** 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 4.35 mg/l [4 hours]	

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
ELECTROLYTE A3-I	157.9	500	N/A	3.4	N/A
methanol	100	300	N/A	3	N/A
2-butoxyethanol	1200	N/A	N/A	4.35	N/A

Skin corrosion/irritation

Product/ingredient name	Result
2-butoxyethanol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
2-butoxyethanol	**Rabbit - Eyes - Moderate irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 100 mg
	Rabbit - Eyes - Severe irritant Amount/concentration applied: 100 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result	
methanol	**Guinea pig - skin** Result: Not sensitizing	OECD 406 [Skin Sensitization]

Skin

Conclusion/Summary [Product] : Not available.

SECTION 11: Toxicological information

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Product/ingredient name	Result	
methanol	**In vitro - Mammalian-Animal** Result: Negative	
	In vitro - Bacteria Result: Negative	OECD 474 [Mammalian Erythrocyte Micronucleus Test]

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
methanol	STOT SE 1, H370

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 : Toxic if inhaled. Causes damage to organs following a single exposure if inhaled.

Skin contact : Toxic in contact with skin. Causes damage to organs following a single exposure in contact with skin. Causes skin irritation.

Ingestion : Toxic if swallowed. Causes damage to organs following a single exposure if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

SECTION 11: Toxicological information

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.

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	
methanol	**Acute - LC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 3289 mg/l [48 hours]	Effect: Mortality
	Acute - EC50 - Fresh water Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* - Juvenile	Effect: Behavior

SECTION 12: Ecological information

(Fledgling, Hatchling, Weanling)
Weight: 0.813 g
13 g/l [96 hours]

Acute - EC50 - Marine water Effect: Reproduction
Algae - Green algae - *Ulva pertusa*
Size: 9.4 mm
2736 mg/l [96 hours]

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
methanol	95% [20 days] - Readily

Conclusion/Summary [Product] : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ELECTROLYTE A3-I	-	-	Readily
methanol	-	-	Readily
2-butoxyethanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
methanol	-0.77	<10	Low
2-butoxyethanol	0.81	-	Low

12.4 Mobility in soil

Soil/water partition coefficient

Product/ingredient name	logKoc	Koc
methanol	0.44	2.75443
2-butoxyethanol	1.8	67.3685

Results of PMT and vPvM assessment

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

SECTION 12: Ecological information

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]

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
methanol	No	N/A	No	No	No	N/A	No
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
methanol	No	N/A	No	No	No	N/A	No
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 08*	discarded organic chemicals consisting of or containing hazardous substances
16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

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.

SECTION 13: Disposal considerations

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

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	UN1992	UN1992	UN1992	UN1992
14.2 UN proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol)	FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol)	FLAMMABLE LIQUID, TOXIC, N.O.S. (methanol)	Flammable liquid, toxic, n.o.s. (methanol)
14.3 Transport hazard class(es)	3 (6.1)	3 (6.1)	3 (6.1)	3 (6.1)
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	No.

Additional information

ADR/RID : **Hazard identification number** 336
Limited quantity 1 L
Special provisions 274
Tunnel code (D/E)

ADN : **Special provisions** 274, 802

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

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 1 L. Packaging instructions: 352. Cargo Aircraft Only: 60 L. Packaging instructions: 364. Limited Quantities - Passenger Aircraft: 1 L. Packaging instructions: Y341.
Special provisions A3

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 A3-I methanol	≥90 ≥50 - ≤75	3 69

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
H2 H3 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.

SECTION 15: Regulatory information

15.2 Chemical safety assessment : Complete.

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
Acute Tox. 3, H301	Calculation method
Acute Tox. 3, H311	Calculation method
Acute Tox. 3, H331	Calculation method
Skin Irrit. 2, H315	Calculation method
Eye Irrit. 2, H319	Calculation method
STOT SE 1, H370	Calculation method

Full text of abbreviated H statements

SECTION 16: Other information

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

Full text of classifications [CLP/GHS]

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
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1

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

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