

SAFETY DATA SHEET



Product name:	ELECTROLYTE A3-II	Page:	1/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

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

Product identifier

<u>Product name:</u>	ELECTROLYTE A3-II
	Cat. No.40900011, 40900013
<u>CAS-No.:</u>	7601-90-3
<u>EC No.:</u>	231-512-4
<u>REACH Reg. No.:</u>	-
<u>Container size:</u>	60 ml

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

<u>Application:</u>	For electrolytic polishing of metallographic preparations
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Details of the supplier of the safety data sheet

<u>Supplier:</u>	Struers A/S Pederstrupvej 84 DK-2750 Ballerup Tel:+45 44 600 800
<u>Responsible for material safety data sheet authoring:</u>	Responsible for material safety data sheet authoring: DHI Any questions to the contents of this material safety data sheet should be sent to: Lisbeth.Mygind@struers.dk

Emergency telephone number

<u>Emergency telephone:</u>	Infotrac: 1-800-535-5053 Struers US: 1-440-871-0071 (Only during office hours)
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SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	2/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

The product is classified:

<u>67/548/EEC:</u>	R5 O;R8 C;R35
<u>GHS:</u>	Ox. Liq. 1;H271 - Skin Corr. 1A;H314 - Met. Corr. 1;H290
<u>Physical and Chemical Hazards:</u>	May cause fire or explosion; strong oxidizer. May be corrosive to metals.
<u>Human health:</u>	Causes severe skin burns and eye damage. Vapors are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung edema.
<u>Environment:</u>	The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Label elements



DANGER

<u>Contains:</u>	Perchloric acid 60%
H271	May cause fire or explosion; strong oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P221b	Take any precaution to avoid mixing with combustibles, alkalis and organic materials.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303/361/353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305/351/338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P309/311	IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. NFPA Rating: Health:3, Fire:0, Reactivity:3, Other: Oxy

Other hazards

<u>PBT/vPvB:</u>	Not relevant.
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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

The product contains: acid and water.

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	3/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

67/548/EEC:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
100	7601-90-3	231-512-4	-	Perchloric acid 60%	R5 O;R8 C;R35	B

GHS:

<u>%:</u>	<u>CAS-No.:</u>	<u>EC No.:</u>	<u>REACH Reg. No:</u>	<u>Chemical name:</u>	<u>Hazard classification:</u>	<u>Notes:</u>
100	7601-90-3	231-512-4	-	Perchloric acid 60%	Ox. Liq. 1;H271 Skin Corr. 1A;H314 Met. Corr. 1;H290	B

References: The full text for all R-phrases and hazard statements are displayed in section 16.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

<u>Inhalation:</u>	Move injured person into fresh air immediately. Call an ambulance. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure. Bring these instructions.
<u>Skin contact:</u>	Flush immediately with plenty of water and remove contaminated clothing. Call an ambulance, continue to rinse during transportation to hospital and bring these instructions.
<u>Eye contact:</u>	Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital taking along these instructions.
<u>Ingestion:</u>	Immediately rinse mouth and drink plenty of water. Call an ambulance. Bring along these instructions. Do not induce vomiting.

Most important symptoms and effects, both acute and delayed

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

Indication of any immediate medical attention and special treatment needed

Medical attention/treatments: Not known.

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	4/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Extinguishing media: Extinguish with water fog.

Special hazards arising from the substance or mixture

Specific hazards: Heating may cause an explosion. Contact with combustible material may cause fire. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion. When heated and in case of fire, toxic vapors/gases may be formed.

Advice for firefighters

Protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Avoid inhalation of vapors and contact with skin and eyes. Provide adequate ventilation. Wear protective gloves and, in case of splashes, goggles/face shield too. In case of splashes: Wear apron or special protective clothing.

Environmental precautions

Environmental precautions: Do not discharge into drains, water courses or onto the ground.

Methods and material for containment and cleaning up

Spill Cleanup Methods: Absorb spillage with non-combustible, absorbent material. Flush with plenty of water to clean spillage area.

Reference to other sections

References: For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

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

Technical measures: Work practice should minimize contact. Explosive perchlorates may develop. Carefully avoid drying of perchloric acid solution in inaccessible places.

Technical precautions: Mechanical ventilation required.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: No special precautions.

Storage conditions: Store in tightly closed original container. Store in a cool and well-ventilated place. Do not store near heat sources or expose to high temperatures. Store segregated from other chemicals (oxidizing agent). Keep/Store away from clothing, reducing agents and combustible materials.

Specific end use(s)

Specific use(s): Not relevant.

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	5/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

No occupational exposure limit assigned.

Exposure controls

<u>Engineering measures:</u>	Provide adequate ventilation.
<u>Personal protection:</u>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
<u>Respiratory equipment:</u>	In case of inadequate ventilation, use air-supplied full-mask.
<u>Hand protection:</u>	Wear protective gloves. Laminate (PE/EVOH) gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.
<u>Eye protection:</u>	Wear goggles/face shield.
<u>Skin protection:</u>	Wear apron or protective clothing in case of splashes.
<u>Environmental Exposure Controls:</u>	Not available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<u>Appearance:</u>	colorless liquid
<u>Odor:</u>	Odorless.
<u>pH:</u>	Not available.
<u>Boiling point:</u>	160°C
<u>Flash point:</u>	Not available.
<u>Explosion limits:</u>	Not available.
<u>Relative density:</u>	1,5
<u>Solubility:</u>	soluble in water
<u>Explosive properties:</u>	May decompose explosively above 75°C. Can explode spontaneously as a result of dehydration.

Other information

<u>Other data:</u>	VOC (Volatile Organic Substances): 0 g/l (calculated)
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SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	6/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: Heating may cause an explosion. None known.

Chemical stability

Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions

Hazardous Reactions: In contact with metals generates hydrogen gas, which together with air can form explosive mixtures. None known.

Conditions to avoid

Conditions/materials to avoid: Avoid heat, flames and other sources of ignition. Oxidizing, avoid contact with reducing agents. Keep/Store away from clothing, reducing agents and combustible materials.

Incompatible materials

Incompatible materials: Metals. Reducing Agents.

Hazardous decomposition products

Hazardous decomposition products: When heated and in case of fire, toxic gases of hydrogenchloride may be formed.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation: Vapors are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung edema.

Skin contact: Strongly corrosive. May cause deep tissue damage.

Eye contact: Strongly corrosive. Causes severe burns. Immediate first aid is imperative.

Ingestion: Strongly corrosive. Even small amounts may be fatal. Symptoms are severe burning pains in mouth, throat and stomach.

Specific effects: Risk of long-term effects is expected to be minimal from occupational exposure.

Carcinogenicity:

National Toxicology Program (NTP): No.

I.A.R.C. Monographs: No.

OSHA: No.

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	7/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity: The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

Persistence and degradability

Degradability: The degradability of the product has not been stated.

Bioaccumulative potential

Bioaccumulative potential: No data available on bioaccumulation.

Mobility in soil

Mobility: No data available.

Results of PBT and vPvB assessment

PBT/vPvB: Not relevant.

Other adverse effects

Other adverse effects: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements. Waste is classified as hazardous waste.

Waste from residues: EWC-code: 16 05 07
READY-TO-USE MIXTURE:
EWC-code: 16 05 06

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	8/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 14: TRANSPORT INFORMATION

UN number

UN-No: 1873

UN proper shipping name

Proper Shipping Name: PERCHLORIC ACID

Additional IMDG information:

EmS: F-A, S-Q

MFAG: 1

Transport hazard class(es)

Class: 5.1 (8) (*)

Packing group

PG: I

Environmental hazards

Marine pollutant: No.

Environmentally Hazardous substance: No.

Special precautions for user

Special precautions: None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Transport in bulk: Not relevant.

SECTION 15: REGULATORY INFORMATION

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

Special provisions:

TSCA: Listed.

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.

National regulation:

Europe/USA:

This Material Safety Data Sheet has been prepared according to the EU-regulation.

Chemical Safety Assessment

CSA status: Not relevant.

SAFETY DATA SHEET

Product name:	ELECTROLYTE A3-II	Page:	9/9
Revision Date:	2013-11-27	Print date:	2013-11-27
Document No.:	M0003	SDS-ID:	US-EN/13.0

SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The following sections contain revisions or new statements: -

The (*) indicates the changes made with respect to the previous version.

Approved by DHI.

Allan Vorup

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

Wording of H-statements:

R5	Heating may cause an explosion.
R8	Contact with combustible material may cause fire.
R35	Causes severe burns.
H271	May cause fire or explosion; strong oxidizer.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

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.
www.dhigroup.com.