

Product name: ELECTROLYTE D2
Revision Date: 2015-02-05
Document No.: M0009

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SDS-ID: US-EN/14.0

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

Product identifier

Product name: ELECTROLYTE D2
Cat. No.40900032

Container size: 1 l

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

Application: For electrolytic polishing of metallographic preparations

Details of the supplier of the safety data sheet

Supplier: Struers A/S
Pederstrupvej 84
DK-2750 Ballerup
Tel:+45 44 600 800

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

Emergency telephone number

Emergency telephone: Infotrac:
1-800-535-5053
Struers US:
1-440-871-0071

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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

The product is classified:

67/548/EEC / 1999/45/EC: R10 C;R34

GHS: Flam. Liq. 3;H226 - Skin Corr. 1;H314 - Eye Dam. 1;H318 (*)

Label elements

(*)



Danger

Contains:

Phosphoric acid

H226 Flammable liquid and vapour.

H314 Causes severe skin burns and eye damage.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.

NFPA Rating: Health:3, Fire:3, Reactivity:0, Other:-

Other hazards

The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure. Organic solvents may be absorbed into the body by inhalation and cause permanent damage to the nervous system, including the brain. (*)

PBT/vPvB: Not relevant.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

The product contains: acid and water.

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67/548/EEC:

%:	CAS-No.:	EC No.:	REACH Reg. No:	Chemical name:	Hazard classification:	Notes:
15-25	7664-38-2	231-633-2	-	Phosphoric acid	C;R34	B
15-25	64-17-5	200-578-6	-	Ethanol	F;R11	
<5	71-23-8	200-746-9	-	Propan-1-ol	F;R11 Xi;R41 R67	
50-70	7732-18-5	231-791-2	-	Water	-	
<1	57-13-6	200-315-5	-	Urea	-	

GHS:

%:	CAS-No.:	EC No.:	REACH Reg. No:	Chemical name:	Hazard classification:	Notes:
15-25	7664-38-2	231-633-2	-	Phosphoric acid	Skin Corr. 1B;H314	B
15-25	64-17-5	200-578-6	-	Ethanol	Flam. Liq. 2;H225 Eye Irrit. 2;H319	
<5	71-23-8	200-746-9	-	Propan-1-ol	Flam. Liq. 2;H225 Eye Dam. 1;H318 STOT SE 3;H336	
50-70	7732-18-5	231-791-2	-	Water	-	
<1	57-13-6	200-315-5	-	Urea	-	

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

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 into fresh air and keep at rest. Be aware that symptoms of lung edema (shortness of breath) may develop up to 24 hours after exposure. Immediately call an ambulance.

Skin contact: Remove contaminated clothes and rinse skin thoroughly with water.

Eye contact: 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.

Ingestion: Immediately rinse mouth and drink plenty of water. Keep person under observation. If person becomes uncomfortable seek hospital and bring 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.

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SECTION 5: FIREFIGHTING MEASURES

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.

Special hazards arising from the substance or mixture

Specific hazards: The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures.

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.

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 away spillage with plenty of water.

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: Never pour water into acid/base. Dilute by slowly pouring the product into water while stirring.

Technical precautions: Local exhaust is recommended. Provide easy access to water supply or an emergency shower. Provide easy access to water supply and eye wash facilities.

Conditions for safe storage, including any incompatibilities

Technical measures for safe storage: Follow rules for flammable liquids.

Storage conditions: Store in a cool and well-ventilated place. Do not store near heat sources or expose to high temperatures.

Specific end use(s)

Specific use(s): Not relevant.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits:

<u>CAS-No.:</u>	<u>Chemical name:</u>	<u>As:</u>	<u>Exposure limits:</u>		<u>Type:</u>	<u>Notes:</u>	<u>References:</u>
64-17-5	Ethyl alcohol	-	1000 ppm	1900 mg/m3	TWA	-	OSHA
71-23-8	n-Propyl alcohol	-	200 ppm	500 mg/m3	TWA	-	OSHA
7664-38-2	Phosphoric acid	-		1 mg/m3	TWA	-	OSHA
71-23-8	n-Propanol	-	100 ppm		TWA	A4	ACGIH
7664-38-2	Phosphoric acid	-		1 mg/m3	TWA	-	ACGIH
		-		3 mg/m3	STEL	15min	
64-17-5	Ethanol	-	1000 ppm		STEL	A3; 15min	ACGIH

Notes:

A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans.

A4: Not Classifiable as a Human Carcinogen.

Exposure controls

Engineering measures:

Provide adequate ventilation. Observe Occupational Exposure Limits and minimize the risk of inhalation of vapors. Local exhaust is recommended. An eye wash bottle must be available at the work site.

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 A2.

Hand protection:

Protective gloves of butyl rubber or PE/EVOH/PE-laminate 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.

Eye protection:

Wear goggles/face shield.

Skin protection:

Wear apron or protective clothing in case of splashes.

Environmental Exposure Controls:

Not available.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: colorless liquid
Odor: Odorless.
pH: < 2 (*)
Boiling point: Not available.
Flash point: $\geq 23\text{ }^{\circ}\text{C}$ and $\leq 60\text{ }^{\circ}\text{C}$ (*)
Explosion limits: Not available.
Relative density: 1,11
Solubility: soluble in water

Other information

Other data: Volatile Organic Compound (VOC): 225,3 g/l (calculated)

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Reactivity: None known.

Chemical stability

Stability: Stable under normal temperature conditions.

Possibility of hazardous reactions

Hazardous Reactions: None known.

Conditions to avoid

Conditions/materials to avoid: Heating. Strong oxidizing substances and strong bases.

Incompatible materials

Incompatible materials: None known.

Hazardous decomposition products

Hazardous decomposition products: When water is added, the product reacts with a number of metals forming hydrogen gas, which may form explosive vapor/air mixtures.

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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. Vapors of organic solvents have narcotic effect and may cause headache, fatigue, dizziness and nausea.

Skin contact: Corrosive. Prolonged contact causes serious tissue damage.

Eye contact: Corrosive. Immediate first aid is necessary.

Ingestion: Corrosive. Even small amounts may cause serious damage.

Specific effects: Frequent inhalation of even small concentrations may cause irritability, fatigue and memory failure and eventually permanent damage to the nervous system, including the brain.

Carcinogenicity:
National Toxicology Program (NTP): No.
I.A.R.C. Monographs: No.
OSHA: No.

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 08

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SECTION 14: TRANSPORT INFORMATION

UN number

UN-No: 2920

UN proper shipping name

Proper Shipping Name: CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Phosphoric acid, Ethanol)

Additional IMDG information:

EmS: F-E, S-C

MFAG: 1

Segregation Group: Alkali

Transport hazard class(es)

Class: 8

Packing group

PG: II

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.
Threshold Limit Values (2014), ACGIH, by the American Conference on Governmental Industrial Hygienists.
The Code of Federal Regulation, Title 29, part 1910. Occupational Safety and Health Standards, Air contaminants (OSHA), with amendments.

Chemical Safety Assessment

CSA status: Not relevant.

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SECTION 16: OTHER INFORMATION

For restrictions on use see section 15.

The following sections contain revisions or new statements: 2, 9.
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.
The classification as corrosive has been made based on the pH value of the product.

Wording of H-statements:

R11	Highly flammable.
R34	Causes burns.
R41	Risk of serious damage to eyes.
R67	Vapors may cause drowsiness and dizziness.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

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.