

Product name:	EPOFIX HARDENER	Page:	1/9
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Document No.:	M0026	SDS-ID:	SG-EN/20.2

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

1.1. Product identifier

Product name: EPOFIX HARDENER
Cat. No. 40200029, 40200031, 40200087

CAS-No.: 90640-67-8 (*)

EC No.: 292-588-2 (*)

REACH Reg. No.: 01-2119487919-13-xxxx (*)

Container size: 130 ml, 500 ml

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

Application: For embedding and impregnation of materialographic specimens

1.3. Details of the supplier of the safety data sheet

Supplier: Struers ApS, Singapore Branch
627A Aljunied Road
#07-08 BizTech Centre
389842 Singapore
Tel: +65 6299 2268

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

1.4. Emergency telephone number

24-hour Emergency Medical Service (EMS): 995.

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SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS:

- Acute oral toxicity Cat 4
- Acute dermal toxicity Cat 4
- Skin corrosion/irritation Cat 1B
- Serious eye damage/eye irritation Cat 1
- Skin sensitizer Cat 1

2.2. Label elements



Danger

H302 + H312	Harmful if swallowed or in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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.
P501	Dispose of contents/container in accordance with local regulations.
P103	Read label before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405	Store locked up.

2.3. Other hazards

Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema.

PBT/vPvB: No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

The product contains: hardener. (*)

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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	90640-67-8	292-588-2	01-2119487919-13-xxxx	Amines, polyethylenepoly-, triethylenetetramine fraction	Acute oral toxicity Cat 4 Acute dermal toxicity Cat 4 Skin corrosion/irritation Cat 1B Serious eye damage/eye irritation Cat 1 Skin sensitizer Cat 1 Aquatic, Chronic Cat 3	

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Inhalation: Move injured person into fresh air immediately. Call an ambulance. Be aware that symptoms of lung oedema (shortness of breath) may develop up to 24 hours after exposure. Bring these instructions.

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

Eye contact: Immediately flush with plenty of water. Remove any contact lenses and open eyes wide apart. Call an ambulance and continue flushing during transportation to hospital. Bring these instructions.

Ingestion: Immediately call a Poison Center/doctor. Rinse mouth. Do not induce vomiting. Do not drink anything without first consulting a doctor. Have these instructions at hand. (*)

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

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

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

Medical attention/treatments: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media: None known.

5.2. Special hazards arising from the substance or mixture

Specific hazards: When heated and in case of fire, very toxic nitrogen oxides may be formed.

5.3. Advice for firefighters

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

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Protective equipment: Avoid inhalation of vapours and contact with skin and eyes. For personal protection, see section 8.

Emergency procedures: No specific recommendations. For personal protection, see section 8.

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Absorb spillage with non-combustible, absorbing material.

6.4. Reference to other sections

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

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

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

Technical measures: Work practice should minimise contact.

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific use(s): No information available.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No occupational exposure limit assigned.

8.2. Exposure controls

Engineering measures: Mix and prepare in a place with efficient exhaust ventilation. 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 ANSI 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. It is recommended to use respiratory equipment with combination filter, type ABEK

Hand protection: Use disposable gloves protecting against epoxy along with cotton gloves closest to the skin. Laminate (PE/EVOH) gloves are recommended. The most suitable glove must be chosen in collaboration with the gloves supplier, who can inform about the breakthrough time of the glove material.

Eye protection: Wear goggles/face shield.

Skin protection: Wear suitable protective clothing as protection against splashing or contamination.

Environmental Exposure Controls: Not available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Form: Liquid.

Colour: Yellow.

Odour: Amine.

pH: 10,7 (ISO 8975)

Melting point: -35°C

Boiling point: 270-300°C

Flash point: 129°C

Explosion limits: Not available.

Vapour pressure: < 0,1 hPa (20 °C)

Relative density: 0,94-0,98

Solubility: soluble in water

Partition coefficient (n-octanol/water): Not available.

Viscosity: Dynamic viscosity: 20 - 30 mPa.s (25 °C)

9.2. Other information

Other data: Volatile Organic Compound (VOC): 0 g/l

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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity: None under normal conditions.

10.2. Chemical stability

Stability: Stable under normal temperature conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: None under normal conditions.

10.4. Conditions to avoid

Conditions/materials to avoid: Heating. Direct sunlight.

10.5. Incompatible materials

Incompatible materials: No information available.

10.6. Hazardous decomposition products

Hazardous decomposition products: When heated and in case of fire, very toxic nitrogen oxides are formed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity (Oral): Harmful if swallowed.
LD50 (oral, rat): 1716.2 mg/kg

Acute Toxicity (Dermal): Harmful in contact with skin.
Acute Toxicity (Dermal LD50): 1720 mg/kg (Rat)

Acute Toxicity (Inhalation): Based on available data, the classification criteria are not met.

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

Serious eye damage/irritation: Causes serious eye damage.

Respiratory or skin sensitisation: May cause an allergic skin reaction.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive Toxicity: Based on available data, the classification criteria are not met.

STOT - Single exposure: Based on available data, the classification criteria are not met.

STOT - Repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

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

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

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SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity: Harmful to aquatic life with long lasting effects.

12.2. Persistence and degradability

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

12.3. Bioaccumulative potential

Bioaccumulative potential: log Pow: -2.65

12.4. Mobility in soil

Mobility: No data available.

12.5. Results of PBT and vPvB assessment

PBT/vPvB: No information available.

12.6. Other adverse effects

Other adverse effects: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues: Dispose of waste and residues in accordance with local authority requirements.

Contaminated packaging: Dispose of waste and residues in accordance with local authority requirements.

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SECTION 14: TRANSPORT INFORMATION

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

14.1. UN number

UN-No: 2735

14.2. UN proper shipping name

Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (Amines, polyethylenepoly-, triethylenetetramine fraction) (*)

Additional IMDG information:

EmS: F-A,S-B

MFAG: 1

Segregation Group: Alkaline

14.3. Transport hazard class(es)

Class: 8

14.4. Packing group

PG: II

14.5. Environmental hazards

Marine pollutant: No.

Environmentally Hazardous No.

Substance:

14.6. Special precautions for user

Special precautions: None known.

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

Transport in bulk: Not relevant.

SECTION 15: REGULATORY INFORMATION

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

National regulation: Singapore Standard SS 586: Part 2 : 2014; Globally harmonised system of classification and labelling of chemicals - Singapore's adaptations.
Singapore Standard SS 586: Part 3 : 2014; Preparation of safety data sheets (SDS).

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SECTION 16: OTHER INFORMATION

The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.

The following sections contain revisions or new statements: 1, 3, 4, 14.

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

Approved by DHI.



Additional information:

Classification according to Singapore Standard SS 586: Part 2 : 2014:
Calculation method.

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.

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