

Date Printed 18.02.2022 Version number 1 Revision Date 18.02.2022

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

· 1.1 Product identifier

· Trade name: EpoThin 2 Hardener

· Article number: AGB8188

• 1.2 Relevant identified uses of the substance or mixture and uses advised against Mounting material for metallographic specimens.

Application of the substance / the preparation:

EpoThin® 2 is a free flowing, low viscosity, low shrinkage epoxy resin that is ideal for use with porous and heat sensitive samples. It produces a clear, bubble free mount, offering an unobstructed view of embedded samples. It has a typical cure time of nine hours at 27°C and is excellent for vacuum impregnation.

- · 1.3 Details of the supplier of the safety data sheet
- · Supplier.

Agar Scientific Ltd Parsonage Lane Stansted CM24 8GF United Kingdom sales@agarscientific.com Tel: +44 (0) 1279 813 519

- · Further information obtainable from: Technical Support
- · 1.4 Emergency telephone number: 24 hours: +44 (0)1856 407333

SECTION 2: Hazards identification

- · 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



health hazard

Repr. 2 H361f Suspected of damaging fertility.



corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

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· Hazard pictograms



GHS05







· Signal word Danger

· Hazard-determining components of labelling:

Polyoxypropylenediamine

m-Phenylenebis(methylamine)

4-tert-butylphenol

Triethylenetetramine, propoxylated

Triethylenetetramine

Trimethylhexamethylene diamine

Hazard statements

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H361f Suspected of damaging fertility.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read carefully and follow all instructions.

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

with water [or 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.

P321 Specific treatment (see on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/

international regulations.

· 2.3 Other hazards

· Results of PBT and vPvB assessment

· **PBT:** Not applicable. · **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures

· Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous components:		
CAS: 9046-10-0	Polyoxypropylenediamine	46.0%
	♦ Skin Corr. 1B, H314	
CAS: 98-54-4	4-tert-butylphenol	15.0%
EINECS: 202-679-0	♠ Repr. 2, H361f; ♦ Eye Dam. 1, H318; ♦ Aquatic Chronic 2, H411; ♦ Skin Irrit. 2, H315; STOT SE 3, H335	
CAS: 1477-55-0	m-Phenylenebis(methylamine)	15.0%
EINECS: 216-032-5	Acute Tox. 3, H331; Skin Corr. 1B, H314; Eye Dam. 1, H318; Acute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 101-02-0	Triphenyl phosphite	8.0%
EINECS: 202-908-4	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319	

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CAS: 26950-63-0	Triethylenetetramine, propoxylated (Contd.	of page 2
NLP: 500-055-5		0.076
	♦ Skin Sens. 1, H317	2.20/
CAS: 112-24-3	Triethylenetetramine	3.0%
EINECS: 203-950-6	Skin Corr. 1B, H314; Nacute Tox. 4, H312; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 25620-58-0	Trimethylhexamethylene diamine	3.0%
EINECS: 247-134-8	Skin Corr. 1B, H314; Nacute Tox. 4, H302; Skin Sens. 1, H317; Aquatic Chronic 3, H412	
CAS: 102-71-6	Triethanolamine	2.0%
EINECS: 203-049-8	♠ Eye Irrit. 2, H319	
·SVHC		
98-54-4 4-tert-butylp	henol	

• Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- · 4.1 Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take off contaminated clothing and wash before reuse.

· After inhalation:

Supply fresh air.

No adverse effects are anticipated from inhalation.

Ensure supply of fresh air.

Seek medical advice immediately.

· After skin contact:

Wash with water and soap and rinse thoroughly.

In case of contact with skin wash off immediately with soap and water.

Consult a doctor if skin irritation persists.

· After eye contact:

Rinse opened eye for several minutes under running water. Then consult a doctor.

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

· After swallowing:

Drink plenty of water and provide fresh air. Call for a doctor immediately.

Seek medical advice immediately.

Do not induce vomiting.

Rinse out mouth and give plenty of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Allergic reactions.

Irritant effects.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

- · 5.1 Extinguishing media
- · Suitable extinguishing agents:

Carbon dioxide.

Water spray jet.

Dry powder.

Foam.

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· For safety reasons unsuitable extinguishing agents: Full water jet.

• 5.2 Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

Unknown risk of formation of toxic pyrolysis products.

Nitrogen oxides (NOx).

Carbon monoxide (CO).

5.3 Advice for firefighters

· Protective equipment:

Positive pressure self-contained breathing apparatus.

Use self-contained breathing apparatus.

Additional information

Fire residues and contaminated firefighting water must be disposed of in accordance within the local regulations.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear gloves.

Wear protective gloves and glasses.

High risk of slipping due to leakage/spillage of product.

Use personal protective equipment (protective gloves, safety glasses, protective clothing).

Keep away from all sources of ignition.

Ensure adequate ventillation.

6.2 Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralising agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Pick up with absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth).

Dispose of absorbed material in accordance within the regulations.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Provide suitable vacuuming at the processing machines and in the processing area.

Use only in well-ventilated areas.

Do not eat, drink, smoke or take drugs at work.

After worktime and before work breaks the affected skin areas must be thoroughly cleaned.

Take off contaminated clothing and wash before reuse.

Use barrier skin cream.

· Information about fire - and explosion protection:

Extinguishing media: Water fog - dried resin only.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Prevent penetration into the ground.

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Do not store together with oxidizing agents.

Do not store together with food and animal food/diet.

Keep container tightly closed.

Keep in a cool place. Store in a dry place.

Keep container in a well-ventilated place.

- Storage:
- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility:

Do not store together with oxidizing agents.

Do not store together with food and animal food/diet.

- · Further information about storage conditions: Keep container tightly sealed.
- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- · 8.1 Control parameters
- Additional information about design of technical facilities:

Ensure adequate ventilation on workstation.

Ingredients with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists valid during the making were used as basis.
- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Do not inhale vapours.

Avoid contact with eyes and skin.

Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of these equipments to chemicals should be ascertained with the respective supplier.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Breathing apparatus in the event of high concentrations.

Short term: filter apparatus, combination filter A-P2.

Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

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Butyl rubber, >120 min (EN 374).

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:



Tightly sealed goggles

- · Body protection: Light protective clothing of plastic material.
- · Limitation and supervision of exposure into the environment

Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information		
· Appearance:		
Form:	Liquid	
Colour:	Clear	
· Odour:	Acrid	

Odour threshold: Not determined.

· **pH-value:** Not determined.

Change in conditionMelting point/freezing point: Undete

Melting point/freezing point: Undetermined. Initial boiling point and boiling range: Undetermined.

· Flash point: 90 °C

Flammability (solid, gas): Not applicable.
 Decomposition temperature: Not determined.

Auto-ignition temperature: Product is not selfigniting.

• **Explosive properties:** Product does not present an explosion hazard.

· Explosion limits:

Lower: Not determined.

Upper: 5 vol.%

· Vapour pressure: Not determined.

Density: Not determined.
Relative density Not determined.
Vapour density Not determined.
Evaporation rate Not determined.

· Solubility in / Miscibility with

water: part. miscible

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

· Solvent content:

Organic solvents: 2.0 % VOC (EC) 2.00 %

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Solids content: 0.0 %

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

- · 10.1 Reactivity No dangerous reactions known if used as directed.
- 10.2 Chemical stability Stable under normal ambient conditions (ambient temperature).
- · Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions

Reactions with strong oxidising agents, strong acids and alkalies.

- · 10.4 Conditions to avoid No further relevant information available.
- · 10.5 Incompatible materials: Oxidising agents.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

[Acute toxicity]

ATE-mix, inhalative, Rat: 17.2 mg/l 4h. ATE-mix, dermal, Rabbit: > 2000 mg/kg. ATE-mix, oral, Rat: > 2000 mg/kg.

Acute toxicity

Harmful if inhaled.

· LD/LC50 v	· LD/LC50 values relevant for classification:		
98-54-4 4-	98-54-4 4-tert-butylphenol		
Oral	LD50	2,951 mg/kg (rat)	
Dermal	LD50	2,288 mg/kg (rabbit)	
1477-55-0	1477-55-0 m-Phenylenebis(methylamine)		
Oral	LD50	1,040 mg/kg (rat)	
Inhalative	LC50/4 h	2.4 mg/l (rat)	
101-02-0 Triphenyl phosphite			
Oral	LD50	1,600 mg/kg (rat)	

- Specific symptoms in biological assay:
- · 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.

- Additional toxicological information:
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- · 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

Suspected of damaging fertility.

- 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.

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SECTION 12: Ecological information

- · 12.1 Toxicity
- · Aquatic toxicity: No further relevant information available.
- · 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- · 12.4 Mobility in soil No further relevant information available.
- · Ecotoxical effects:
- · Remark: Toxic for fish
- · Additional ecological information:
- · General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

- · 12.5 Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- · 13.1 Waste treatment methods
- · Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

· Waste disposal key:

Disposal in an incineration plant in accordance with the regulations of the local authorities.

Coordinate disposal with the authorities if necessary.

Waste no. (recommended) 080409*

Recommendation:

Packaging that cannot be cleaned should be disposed of as for product.

Uncontaminated packaging may be taken for recycling.

Waste no. (recommended) 150110*,150102,150104

SECTION 14: Transport information

· 14.1 UN-Number · ADR, IMDG, IATA	UN2735
· 14.2 UN proper shipping name · ADR	2735 AMINES, LIQUID, CORROSIVE, N.O.S. (m-Phenylenebis (methylamine), Polyoxypropylenediamine), ENVIRONMENTALLY HAZARDOUS

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· IMDG	AMINES, LIQUID, CORROSIVE, N.O.S. (r Phenylenebis (methylamine Polyoxypropylenediamine), MARINE POLLUTANTAMINES, LIQUID, CORROSIVE, N.O.S. (r Phenylenebis (methylamine Polyoxypropylenediamine)
· 14.3 Transport hazard class(es)	
· ADR, IMDG	
Class	8 Corrosive substances.
· Label	8
·IATA	
Class Label	8 Corrosive substances.
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	Product contains environmentally hazardou substances: Triphenyl phosphite
· Marine pollutant:	Yes Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· 14.6 Special precautions for user · EMS Number:	Warning: Corrosive substances. F-A,S-B
· Segregation groups	Alkalis
Stowage Category	A
· Segregation Code	SG35 Stow "separated from" SGG1-acids
 14.7 Transport in bulk according to An of Marpol and the IBC Code 	nex II Not applicable.
· Transport/Additional information:	
· ADR	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per inner packaging: 50 m Maximum net quantity per outer packaging: 500 m
· Transport category · Tunnel restriction code	2 E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 10 ml
· UN "Model Regulation":	UN 2735 AMINES, LIQUID, CORROSIVE, N.O. (M-PHENYLENEBIS (METHYLAMINE POLYOXYPROPYLENEDIAMINE), 8, II,
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ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Directive 2012/18/EU
- · Named dangerous substances ANNEX I None of the ingredients is listed.
- · Seveso category E2 Hazardous to the Aquatic Environment
- · Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
- · National regulations:
- · Other regulations, limitations and prohibitive regulations
- Substances of very high concern (SVHC) according to REACH, Article 57

98-54-4 4-tert-butylphenol

• 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.
- H361f Suspected of damaging fertility.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- Department issuing SDS: Sales department
- Contact:

sales@agarscientific.com

Tel: +44 (0) 1279 813 519

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic SVHC: Substances of Very High Concern

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vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4 Acute Tox. 3: Acute toxicity – Category 3

Skin Corr. 1B: Skin corrosion/irritation – Category 1B Skin Irrit. 2: Skin corrosion/irritation – Category 2

Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

** Pata compared to the provious version altered

* Data compared to the previous version altered.