



## SAFETY DATA SHEET

GlassCast 10/50 Epoxy Casting Resin

Revision Date 26.02.2016

Print Date 27.02.2016

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

#### 1.1 Product identifier

Trade name : GlassCast 10/50 Epoxy Casting Resin

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

Use of the Substance/Mixture : Casting, Electrical Insulation

#### 1.3 Details of the supplier of the safety data sheet

**Company name:** Easy Composites Ltd

Unit 39, Park Hall Business Village

Longton, Stoke on Trent

Staffordshire

ST3 5XA

United Kingdom

**Tel:** +44 (0) 1782 454499

**Fax:** +44 (0) 1782 596868

**Email:** sales@easycomposites.co.uk

#### 1.4 Emergency telephone number

+44 (0) 1782 454499

(office hours only)

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Skin irritation , Category 2 H315: Causes skin irritation.

Serious eye damage , Category 1 H318: Causes serious eye damage.

Skin sensitisation , Category 1 H317: May cause an allergic skin reaction.

Chronic aquatic toxicity , Category 2 H411: Toxic to aquatic life with long lasting effects.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H315 Causes skin irritation.  
 H317 May cause an allergic skin reaction.  
 H318 Causes serious eye damage.

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	H411	Toxic to aquatic life with long lasting effects.
Precautionary statements	: <b>Prevention:</b>	
	P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
	P273	Avoid release to the environment.
	P280	Wear eye protection/ face protection.
	P280	Wear protective gloves.
	<b>Response:</b>	
	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 or doctor/ physician.

Hazardous components which must be listed on the label:

reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700)

oxirane, mono[(C12-14-alkyloxy)methyl]derivs

1,4-bis(2,3-epoxypropoxy)butane

bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Modified epoxy resin

#### Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700)	25068-38-6 01-2119456619-26	Eye Irrit.2; H319 Skin Irrit.2; H315 Skin Sens.1; H317 Aquatic Chronic2; H411	>= 50 - <= 100
oxirane, mono[(C12-14-alkyloxy)methyl]derivs	Not Assigned 271-846-8 01-2119485289-22	Skin Irrit.2; H315 Skin Sens.1; H317	>= 10 - < 12,5
1,4-bis(2,3-epoxypropoxy)butane	2425-79-8	Acute Tox.4; H332	>= 5 - < 7

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	219-371-7 01-2119494060-45	Acute Tox.4; H312 Eye Dam.1; H318 Acute Tox.4; H302 Skin Sens.1; H317 Aquatic Chronic3; H412	
bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	41556-26-7 255-437-1	Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	>= 0,1 - < 0,25

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Keep warm and in a quiet place.  
Show this safety data sheet to the doctor in attendance.  
Take off all contaminated clothing immediately.
- If inhaled : Move to fresh air.  
Keep patient warm and at rest.  
If unconscious place in recovery position and seek medical advice.  
If symptoms persist, call a physician.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Wash off immediately with soap and plenty of water.  
Do NOT use solvents or thinners.  
If on clothes, remove clothes.  
If skin irritation persists, call a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,  
for at least 15 minutes.  
If eye irritation persists, consult a specialist.  
If easy to do, remove contact lens, if worn.
- If swallowed : Keep at rest.  
Do not induce vomiting without medical advice.  
Keep respiratory tract clear.  
If symptoms persist, call a physician.

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

- Symptoms : irritant effects  
Redness  
sensitising effects

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

- Treatment : The first aid procedure should be established in consultation

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with the doctor responsible for industrial medicine.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Foam  
Sand  
Carbon dioxide (CO<sub>2</sub>)  
Water mist

Unsuitable extinguishing media : Water spray jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The pressure in sealed containers can increase under the influence of heat.  
Cool closed containers exposed to fire with water spray.

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

Further information : In the event of fire and/or explosion do not breathe fumes.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Immediately evacuate personnel to safe areas.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.  
Evacuate personnel to safe areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

### 6.2 Environmental precautions

Environmental precautions : Do not allow uncontrolled discharge of product into the environment.  
Try to prevent the material from entering drains or water courses.  
Local authorities should be advised if significant spillages cannot be contained.

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## 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Pick up and transfer to properly labelled containers.

## 6.4 Reference to other sections

For personal protection see section 8.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.  
Avoid inhalation, ingestion and contact with skin and eyes.  
Wear personal protective equipment.  
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers.

Advice on common storage : Keep away from oxidizing agents, strongly acid or alkaline materials and amines.  
Keep product and empty container away from heat and sources of ignition.  
Keep away from food and drink.

Other data : Stable at normal ambient temperature and pressure.

### 7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

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### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight =< 700) : End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Acute systemic effects, Long-term systemic effects  
Value: 8,33 mg/kg  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Acute systemic effects, Long-term local effects  
Value: 12,25 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Acute systemic effects, Long-term systemic effects  
Value: 3,571 mg/kg  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Acute systemic effects, Long-term systemic effects  
Value: 0,75 mg/kg

oxirane, mono[(C12-14-alkyloxy)methyl]derivs : End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 3,9 mg/kg  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term systemic effects  
Value: 13,8 mg/m<sup>3</sup>

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

reaction product: bisphenol-A- (epichlorhydrin); epoxy resin (number average molecular weight =< 700) : Fresh water  
Value: 0,006 mg/l

Marine water  
Value: 0,0006 mg/l  
Intermittent releases  
Value: 0,018 mg/l  
Sewage treatment plant  
Value: 10 mg/l  
Fresh water sediment  
Value: 0,996 mg/kg  
Marine sediment  
Value: 0,0996 mg/kg  
Soil  
Value: 0,196 mg/kg

oxirane, mono[(C12-14-alkyloxy)methyl]derivs : Sewage treatment plant  
Value: 10 mg/l  
Fresh water  
Value: 0,0072 mg/l  
Marine water  
Value: 0,00072 mg/l  
Fresh water sediment  
Value: 66,77 mg/kg  
Marine sediment

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Value: 6,677 mg/kg  
Soil  
Value: 80,12 mg/kg

## 8.2 Exposure controls

### Engineering measures

Effective exhaust ventilation system  
effective ventilation in all processing areas

### Personal protective equipment

- Eye protection : Do not wear contact lenses.  
Safety glasses with side-shields conforming to EN166  
Ensure that eyewash stations and safety showers are close to the workstation location.
- Hand protection  
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
- Skin and body protection : Protective suit
- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. In the case of vapour formation use a respirator with an approved filter.  
Respirator with a vapour filter (EN 141)  
Apply technical measures to comply with the occupational exposure limits.  
This should be achieved by a good general extraction and -if practically feasible- by the use of a local exhaust ventilation.
- Protective measures : Avoid contact with skin.  
Wear suitable protective equipment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Colour : colourless
- Odour : slight
- Odour Threshold : not determined
- pH : not determined
- Melting point/freezing point : Not applicable
- Boiling point/boiling range : > 200 °C
- Flash point : 150 °C

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Evaporation rate	: not determined
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: not determined
Density	: 1,12 g/cm <sup>3</sup> (25 °C)
Bulk density	: not determined
Solubility(ies) Solubility in other solvents	: not determined
Partition coefficient: n- octanol/water	: No data available
Auto-ignition temperature	: Not applicable
Thermal decomposition	: Method: No data available
Viscosity Viscosity, dynamic	: 700 - 1.000 mPa.s (25 °C)
Viscosity, kinematic	: not determined
Explosive properties	: Not applicable
Oxidizing properties	: Not applicable

## 9.2 Other information

Surface tension	: not determined
Sublimation point	: Not applicable

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with the following substances:



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Bases  
Strong oxidizing agents  
Avoid amines.

## 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

## 10.5 Incompatible materials

Materials to avoid : Incompatible with oxidizing agents.

## 10.6 Hazardous decomposition products

Hazardous decomposition products : This product may release the following:  
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product:

Acute oral toxicity : Remarks: No data available  
Acute toxicity estimate : > 2.000 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg  
Method: Calculation method

##### Components:

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Acute oral toxicity : LD50 (Rat, female): > 2.000 mg/kg  
Method: OECD Test Guideline 420  
GLP: yes

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

#### Skin corrosion/irritation

##### Product:

Remarks: No data available

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## **Components:**

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Species: Rabbit

Exposure time: 4 h

Method: OECD Test Guideline 404

Result: Skin irritation

GLP: yes

## **Serious eye damage/eye irritation**

### **Product:**

Remarks: No data available

## **Respiratory or skin sensitisation**

### **Product:**

Remarks: No data available

## **Components:**

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Test Type: Mouse Local Lymph Node assay (LLNA)

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

GLP: yes

## **Germ cell mutagenicity**

## **Carcinogenicity**

## **Reproductive toxicity**

## **STOT - single exposure**

### **Product:**

Remarks: Not applicable

## **STOT - repeated exposure**

## **Repeated dose toxicity**

### **Product:**

Remarks: No data available

## **Aspiration toxicity**

## **Components:**

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

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No aspiration toxicity classification

## Further information

### Product:

Remarks: No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

#### Components:

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): 1,7 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,3 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes

### 12.2 Persistence and degradability

#### Product:

Biodegradability : Remarks: No data available

#### Components:

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301F  
GLP: yes

### 12.3 Bioaccumulative potential

#### Product:

Bioaccumulation : Remarks: No data available

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## Components:

**reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight =< 700):**

Partition coefficient: n-octanol/water : log Pow: 3,242 (25 °C)  
pH: 7,1  
Method: OECD Test Guideline 117  
GLP: yes

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

## 12.6 Other adverse effects

### Product:

Additional ecological information : Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : In accordance with local and national regulations.  
Container hazardous when empty.  
Do not dispose of with domestic refuse.  
Do not mix waste streams during collection.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID/ADN : UN 3082

IMDG : UN 3082

IATA : UN 3082

### 14.2 UN proper shipping name

ADR/RID/ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Epoxy resin)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

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N.O.S.  
(Epoxy resin)

**IATA** : Environmentally hazardous substance, liquid, n.o.s.  
(Epoxy resin)

## 14.3 Transport hazard class(es)

**ADR/RID/ADN** : 9

**IMDG** : 9

**IATA** : 9

## 14.4 Packing group

### ADR/RID/ADN

Packing group : III

Classification Code : M6

Hazard Identification Number : 90

Labels : 9

Remarks : ADR: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

### IMDG

Packing group : III

Labels : 9

EmS Code : F-A, S-F

Remarks : IMDG: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class all provisions of this Code relevant to any additional hazards continue to apply.

### IATA

Packing instruction (cargo aircraft) : 964

Packing instruction (passenger aircraft) : 964

Packing group : III

Labels : 9

Remarks : IATA: These substances when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for

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solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

## 14.5 Environmental hazards

### ADR/RID/ADN

Environmentally hazardous : yes

### IMDG

Marine pollutant : yes

## 14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

E2	ENVIRONMENTAL HAZARDS	Quantity 1 200 t	Quantity 2 500 t
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### 15.2 Chemical Safety Assessment

Not applicable

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## SECTION 16: Other information

### Full text of H-Statements

H302 : Harmful if swallowed.  
H312 : Harmful in contact with skin.  
H315 : Causes skin irritation.  
H317 : May cause an allergic skin reaction.  
H318 : Causes serious eye damage.

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H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
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.

## Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Acute aquatic toxicity
Aquatic Chronic	: Chronic aquatic toxicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation

## Further information

Training advice	: Provide adequate information, instruction and training for operators.
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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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

**1.1 Product identifier** : GlassCast 10 Epoxy Hardener  
Trade name

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

Use of the Substance/Mixture : Epoxy Hardener

**1.3 Details of the supplier of the safety data sheet**

**Company name:** Easy Composites Ltd

Unit 39, Park Hall Business Village

Longton, Stoke on Trent

Staffordshire

ST3 5XA

United Kingdom

**Tel:** +44 (0) 1782 454499

**Fax:** +44 (0) 1782 596868

**Email:** sales@easycomposites.co.uk

**1.4 Emergency telephone number** +44 (0) 1782 454499  
(office hours only)

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**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity , Category 4 H302: Harmful if swallowed.

Skin corrosion , Category 1B H314: Causes severe skin burns and eye damage.

Skin sensitisation , Category 1 H317: May cause an allergic skin reaction.

Chronic aquatic toxicity , Category 3 H412: Harmful to aquatic life with long lasting effects.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :  

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.



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H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ 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 or doctor/ physician.

Hazardous components which must be listed on the label:

3-aminomethyl-3,5,5-trimethylcyclohexylamine

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with trimethylhexane-1,6

trimethylhexane-1,6-diamine

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Cycloaliphatic amine based mixture

#### Hazardous components

Chemical Name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 01-2119514687-32	Acute Tox.4; H312 Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412	>= 30 - < 50
benzyl alcohol	100-51-6 202-859-9	Acute Tox.4; H302 Acute Tox.4; H332	>= 20 - < 25

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	01-2119492630-38	Eye Irrit.2; H319	
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with trimethylhexane-1,6	153195-44-9	Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412	>= 12,5 - < 20
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	9046-10-0	Skin Corr.1C; H314 Eye Dam.1; H318 Aquatic Chronic2; H411	>= 10 - < 12,5
trimethylhexane-1,6-diamine	25620-58-0 247-134-8	Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412	>= 1 - < 2,5

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.  
Keep warm and in a quiet place.  
Take off all contaminated clothing immediately.
- If inhaled : Move to fresh air.  
Keep patient warm and at rest.  
If unconscious place in recovery position and seek medical advice.  
If symptoms persist, call a physician.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Wash off immediately with soap and plenty of water.  
Do NOT use solvents or thinners.  
If on clothes, remove clothes.  
Burns must be treated by a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
If eye irritation persists, consult a specialist.  
If easy to do, remove contact lens, if worn.
- If swallowed : Do NOT induce vomiting.  
If a person vomits when lying on his back, place him in the recovery position.  
Call a physician immediately.  
Give small amounts of water to drink.

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

- Symptoms : corrosive effects  
Burn

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

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

---

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Foam  
Dry powder  
Water mist

Unsuitable extinguishing media : None known.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The pressure in sealed containers can increase under the influence of heat.  
Cool closed containers exposed to fire with water spray.  
Hazardous decomposition products formed under fire conditions.

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

Further information : In the event of fire and/or explosion do not breathe fumes.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Immediately evacuate personnel to safe areas.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.  
Evacuate personnel to safe areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

### 6.2 Environmental precautions

Environmental precautions : Do not allow uncontrolled discharge of product into the environment.

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Try to prevent the material from entering drains or water courses.  
Local authorities should be advised if significant spillages cannot be contained.

## 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Pick up and transfer to properly labelled containers.

## 6.4 Reference to other sections

For personal protection see section 8.

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.  
Do not breathe vapours or spray mist.  
Avoid inhalation, ingestion and contact with skin and eyes.  
Wear personal protective equipment.  
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.

Hygiene measures : Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. To maintain product quality, do not store in heat or direct sunlight.

Further information on storage conditions : Protect from moisture.

Advice on common storage : Keep away from isocyanates.  
Do not store near acids.  
Keep away from oxidizing agents.

Other data : Stable at normal ambient temperature and pressure.

### 7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this

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substance/mixture.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

benzyl alcohol : End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Short-term exposure, Systemic effects  
Value: 450 mg/m<sup>3</sup>  
End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Long-term exposure, Systemic effects  
Value: 90 mg/m<sup>3</sup>  
End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Short-term exposure, Systemic effects  
Value: 47 mg/kg  
End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term exposure, Systemic effects  
Value: 9,5 mg/kg  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Short-term exposure, Systemic effects  
Value: 25 mg/kg  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Long-term exposure, Systemic effects  
Value: 5 mg/kg  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Short-term exposure, Systemic effects  
Value: 40,55 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term exposure, Systemic effects  
Value: 8,11 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Short-term exposure, Systemic effects  
Value: 28,5 mg/kg  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Long-term exposure, Systemic effects  
Value: 5,7 mg/kg

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)- : End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 2,5 mg/kg  
End Use: Workers  
Exposure routes: Skin contact

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Potential health effects: Long-term local effects  
Value: 0,623 mg/cm<sup>2</sup>  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Long-term systemic effects  
Value: 1,25 mg/kg  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Long-term local effects  
Value: 0,311 mg/cm<sup>2</sup>  
End Use: Consumers  
Exposure routes: Ingestion  
Potential health effects: Long-term systemic effects  
Value: 0,04 mg/kg

## Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

3-aminomethyl-3,5,5-trimethylcyclohexylamine	: Fresh water Value: 0,06 mg/l Marine water Value: 0,006 mg/l Intermittent releases Value: 0,23 mg/l Fresh water sediment Value: 5,784 mg/kg Marine sediment Value: 0,578 mg/kg Sewage treatment plant Value: 3,18 mg/l Soil Value: 1,121 mg/kg
benzyl alcohol	: Fresh water Value: 1 mg/l Marine water Value: 0,1 mg/l Fresh water sediment Value: 5,27 mg/kg Marine sediment Value: 0,527 mg/kg Soil Value: 0,456 mg/kg Sewage treatment plant Value: 39 mg/l Intermittent releases Value: 2,3 mg/l
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	: Fresh water Value: 0,015 mg/l  Marine water Value: 0,0143 mg/l Fresh water sediment Value: 0,132 mg/kg Marine sediment Value: 0,125 mg/kg Soil Value: 0,0176 mg/kg

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Intermittent releases  
Value: 0,15 mg/l  
Sewage treatment plant  
Value: 7,5 mg/l

## 8.2 Exposure controls

### Engineering measures

Effective exhaust ventilation system  
effective ventilation in all processing areas

### Personal protective equipment

- Eye protection : Safety glasses with side-shields conforming to EN166  
Do not wear contact lenses.  
Ensure that eyewash stations and safety showers are close to the workstation location.
- Hand protection  
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
- Skin and body protection : Protective suit
- Respiratory protection : Use respirator when performing operations involving potential exposure to vapour of the product.  
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.  
Respirator with a vapour filter (EN 141)
- Protective measures : Avoid contact with skin.  
Wear suitable protective equipment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Colour : light yellow
- Odour : ammoniacal
- Odour Threshold : not determined
- pH : not determined
- Melting point/freezing point : Not applicable
- Boiling point/boiling range : > 200 °C
- Flash point : 150 °C

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Evaporation rate	: not determined
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: not determined
Density	: 1 g/cm <sup>3</sup> (25 °C)
Bulk density	: not determined
Solubility(ies) Solubility in other solvents	: not determined
Partition coefficient: n- octanol/water	: No data available
Auto-ignition temperature	: Not applicable
Thermal decomposition	: Method: No data available
Viscosity Viscosity, dynamic	: 150 - 250 mPa.s (25 °C)
Viscosity, kinematic	: not determined
Explosive properties	: Not applicable
Oxidizing properties	: Not applicable

## 9.2 Other information

Surface tension	: not determined
Sublimation point	: Not applicable

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

Hazardous reactions	: Reacts with the following substances: Acids
---------------------	--



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Strong oxidizing agents

## 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

## 10.5 Incompatible materials

Materials to avoid : Strong acids  
Strong oxidizing agents

## 10.6 Hazardous decomposition products

Hazardous decomposition products : This product may release the following:  
Nitrogen oxides (NOx)  
Carbon monoxide  
Carbon dioxide (CO2)

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate : 568,18 mg/kg  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg  
Method: Calculation method

##### Components:

##### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Acute oral toxicity : Acute toxicity estimate : 500 mg/kg  
Method: Converted acute toxicity point estimate

Acute dermal toxicity : Acute toxicity estimate : 1.100 mg/kg  
Method: Converted acute toxicity point estimate

##### **benzyl alcohol:**

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.178 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes

##### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Acute oral toxicity : LD50 (Rat, male and female): 2.885,3 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): 2.979,7 mg/kg  
Method: OECD Test Guideline 402

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GLP: yes

## Skin corrosion/irritation

### Product:

Remarks: Acute dermal irritation/corrosion

### Components:

#### **benzyl alcohol:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

GLP: yes

#### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive

## Serious eye damage/eye irritation

### Product:

Remarks: Severe eye irritation

### Components:

#### **benzyl alcohol:**

Species: Rabbit

Method: OECD Test Guideline 405

Result: Eye irritation

GLP: yes

#### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Method: OECD Test Guideline 405

Result: Risk of serious damage to eyes.

## Respiratory or skin sensitisation

### Product:

Remarks: No data available

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**Germ cell mutagenicity**

**Carcinogenicity**

**Reproductive toxicity**

**STOT - single exposure**

**STOT - repeated exposure**

**Repeated dose toxicity**

**Product:**

Remarks: No data available

**Aspiration toxicity**

**Components:**

**3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

No aspiration toxicity classification

**Further information**

**Product:**

Remarks: No data available

---

## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

**Components:**

**3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: Directive 67/548/EEC, Annex V, C.1.  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : ErC50 (Scenedesmus capricornutum (fresh water algae)): > 50 mg/l

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Exposure time: 72 h  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, C.3.  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 3 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
GLP: yes

## **benzyl alcohol:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

## **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 15 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 80 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 0,32 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

## **12.2 Persistence and degradability**

### **Product:**

Biodegradability : Remarks: No data available

### **Components:**

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Biodegradability : Test Type: aerobic  
Result: Not readily biodegradable.

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Method: Directive 67/548/EEC Annex V, C.4.A.  
GLP: yes

### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Biodegradability : Test Type: aerobic  
Result: Not readily biodegradable.  
Method: OECD Test Guideline 301B  
GLP: yes

### **trimethylhexane-1,6-diamine:**

Biodegradability : Test Type: aerobic  
Result: Not readily biodegradable.  
Method: Directive 67/548/EEC Annex V, C.4.A.  
GLP: yes

## 12.3 Bioaccumulative potential

### **Product:**

Bioaccumulation : Remarks: No data available

### **Components:**

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Partition coefficient: n-octanol/water : log Pow: 0,99  
Method: OECD Test Guideline 107  
GLP: yes

### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Partition coefficient: n-octanol/water : log Pow: 1,34 (25 °C)  
Method: OECD Test Guideline 117  
GLP: yes

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

### **Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

## 12.6 Other adverse effects

### **Product:**

Additional ecological information : Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

- Product : In accordance with local and national regulations.  
Container hazardous when empty.  
Do not dispose of with domestic refuse.  
Do not mix waste streams during collection.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

---

## SECTION 14: Transport information

### 14.1 UN number

- ADR/RID/ADN : UN 2735
- IMDG : UN 2735
- IATA : UN 2735

### 14.2 UN proper shipping name

- ADR/RID/ADN : AMINES, LIQUID, CORROSIVE, N.O.S.  
(Isophorone diamine)
- IMDG : AMINES, LIQUID, CORROSIVE, N.O.S.  
(Isophorone diamine)
- IATA : Amines, liquid, corrosive, n.o.s.  
(Isophorone diamine)

### 14.3 Transport hazard class(es)

- ADR/RID/ADN : 8
- IMDG : 8
- IATA : 8

### 14.4 Packing group

- ADR/RID/ADN
- Packing group : III
- Classification Code : C7
- Hazard Identification Number : 80
- Labels : 8
- Remarks : ADR: These substances when carried in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids, are not subject to any other provisions of ADR provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IMDG

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Packing group : III  
Labels : 8  
EmS Code : F-A, S-B  
Remarks : IMDG: Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 l or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class all provisions of this Code relevant to any additional hazards continue to apply.

IMDG Code segregation group 18 - Alkalis

### IATA

Packing instruction (cargo aircraft) : 856  
Packing instruction (passenger aircraft) : 852  
Packing group : III  
Labels : 8  
Remarks : IATA: These substances when transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass of 5 kg or less for solids, are not subject to any other provisions of these Regulations provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

### 14.5 Environmental hazards

#### ADR/RID/ADN

Environmentally hazardous : no

#### IMDG

Marine pollutant : no

### 14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

---

## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

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REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

## 15.2 Chemical Safety Assessment

Not applicable

## SECTION 16: Other information

### Full text of H-Statements

H302 : Harmful if swallowed.  
H312 : Harmful in contact with skin.  
H314 : Causes severe skin burns and eye damage.  
H317 : May cause an allergic skin reaction.  
H318 : Causes serious eye damage.  
H319 : Causes serious eye irritation.  
H332 : Harmful if inhaled.  
H411 : Toxic to aquatic life with long lasting effects.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

Acute Tox. : Acute toxicity  
Aquatic Chronic : Chronic aquatic toxicity  
Eye Dam. : Serious eye damage  
Eye Irrit. : Eye irritation  
Skin Corr. : Skin corrosion  
Skin Sens. : Skin sensitisation

### Further information

Training advice : Provide adequate information, instruction and training for operators.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



---

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

**1.1 Product identifier** : GlassCast 50 Epoxy Hardener  
Trade name

**1.2 Relevant identified uses of the substance or mixture and uses advised against**  
Use of the : Epoxy Hardener  
Substance/Mixture

**1.3 Details of the supplier of the safety data sheet**

**Company name:** Easy Composites Ltd  
Unit 39, Park Hall Business Village  
Longton, Stoke on Trent  
Staffordshire  
ST3 5XA  
United Kingdom

**Tel:** +44 (0) 1782 454499

**Fax:** +44 (0) 1782 596868

**Email:** sales@easycomposites.co.uk

**1.4 Emergency telephone number** +44 (0) 1782 454499 (office hours only)

---

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity , Category 4	H302: Harmful if swallowed.
Skin corrosion , Category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Skin sensitisation , Category 1	H317: May cause an allergic skin reaction.
Chronic aquatic toxicity , Category 3	H412: Harmful to aquatic life with long lasting effects.

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :  

Signal word : Danger

Hazard statements : H302 Harmful if swallowed.

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H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5

3-aminomethyl-3,5,5-trimethylcyclohexylamine

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Aliphatic Amine

#### Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification (REGULATION (EC) No 1272/2008)	Concentration (%)
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	9046-10-0	Skin Corr.1C; H314 Eye Dam.1; H318 Aquatic Chronic3;	>= 50 - <= 100

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		H412	
4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5	38294-64-3	Acute Tox.4; H302 Acute Tox.4; H312 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412	>= 20 - < 25
benzyl alcohol	100-51-6 202-859-9 01-2119492630-38	Acute Tox.4; H302 Acute Tox.4; H332 Eye Irrit.2; H319	>= 10 - < 12,5
3-aminomethyl-3,5,5-trimethylcyclohexylamine	2855-13-2 220-666-8 01-2119514687-32	Acute Tox.4; H312 Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412	>= 7 - < 10

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.  
Keep warm and in a quiet place.  
Take off all contaminated clothing immediately.
- If inhaled : Move to fresh air.  
Keep patient warm and at rest.  
If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.  
If breathing is irregular or stopped, administer artificial respiration.
- In case of skin contact : Wash off immediately with soap and plenty of water.  
Do NOT use solvents or thinners.  
If on clothes, remove clothes.  
Burns must be treated by a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
If eye irritation persists, consult a specialist.  
If easy to do, remove contact lens, if worn.
- If swallowed : Do NOT induce vomiting.  
If a person vomits when lying on his back, place him in the recovery position.  
Call a physician immediately.  
Give small amounts of water to drink.

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

- Symptoms : Burn

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superficial burning sensation  
Redness  
Severe irritation

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

Treatment : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Foam  
Dry powder  
Water mist

Unsuitable extinguishing media : None known.

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : The pressure in sealed containers can increase under the influence of heat.  
Cool closed containers exposed to fire with water spray.  
Hazardous decomposition products formed under fire conditions.

### 5.3 Advice for firefighters

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

Further information : In the event of fire and/or explosion do not breathe fumes.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Immediately evacuate personnel to safe areas.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.  
Evacuate personnel to safe areas.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

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### 6.2 Environmental precautions

- Environmental precautions : Do not allow uncontrolled discharge of product into the environment.  
Try to prevent the material from entering drains or water courses.  
Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Pick up and transfer to properly labelled containers.

### 6.4 Reference to other sections

- For personal protection see section 8.
- 

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.  
Do not breathe vapours or spray mist.  
Avoid inhalation, ingestion and contact with skin and eyes.  
Wear personal protective equipment.  
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.
- Hygiene measures : Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. To maintain product quality, do not store in heat or direct sunlight.
- Further information on storage conditions : Protect from moisture.
- Advice on common storage : Keep away from isocyanates.  
Do not store near acids.  
Keep away from oxidizing agents.
- Other data : Stable at normal ambient temperature and pressure.
-

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## 7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-	: End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 2,5 mg/kg End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term local effects Value: 0,623 mg/cm <sup>2</sup> End Use: Consumers Exposure routes: Skin contact Potential health effects: Long-term systemic effects Value: 1,25 mg/kg End Use: Consumers Exposure routes: Skin contact Potential health effects: Long-term local effects Value: 0,311 mg/cm <sup>2</sup> End Use: Consumers Exposure routes: Ingestion Potential health effects: Long-term systemic effects Value: 0,04 mg/kg
benzyl alcohol	: End Use: Workers Exposure routes: Inhalation Potential health effects: Short-term exposure, Systemic effects Value: 450 mg/m <sup>3</sup> End Use: Workers Exposure routes: Inhalation Potential health effects: Long-term exposure, Systemic effects Value: 90 mg/m <sup>3</sup> End Use: Workers Exposure routes: Skin contact Potential health effects: Short-term exposure, Systemic effects Value: 47 mg/kg End Use: Workers Exposure routes: Skin contact Potential health effects: Long-term exposure, Systemic effects Value: 9,5 mg/kg End Use: Consumers Exposure routes: Ingestion Potential health effects: Short-term exposure, Systemic effects Value: 25 mg/kg End Use: Consumers Exposure routes: Ingestion Potential health effects: Long-term exposure, Systemic effects

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Value: 5 mg/kg  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Short-term exposure, Systemic effects  
Value: 40,55 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Inhalation  
Potential health effects: Long-term exposure, Systemic effects  
Value: 8,11 mg/m<sup>3</sup>  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Short-term exposure, Systemic effects  
Value: 28,5 mg/kg  
End Use: Consumers  
Exposure routes: Skin contact  
Potential health effects: Long-term exposure, Systemic effects  
Value: 5,7 mg/kg

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)- : Fresh water  
Value: 0,015 mg/l  
Marine water  
Value: 0,0143 mg/l  
Fresh water sediment  
Value: 0,132 mg/kg  
Marine sediment  
Value: 0,125 mg/kg  
Soil  
Value: 0,0176 mg/kg  
Intermittent releases  
Value: 0,15 mg/l  
Sewage treatment plant  
Value: 7,5 mg/l  
benzyl alcohol : Fresh water  
Value: 1 mg/l  
Marine water  
Value: 0,1 mg/l  
Fresh water sediment  
Value: 5,27 mg/kg  
Marine sediment  
Value: 0,527 mg/kg  
Soil  
Value: 0,456 mg/kg  
Sewage treatment plant  
Value: 39 mg/l  
Intermittent releases  
Value: 2,3 mg/l  
3-aminomethyl-3,5,5-trimethylcyclohexylamine : Fresh water  
Value: 0,06 mg/l  
Marine water  
Value: 0,006 mg/l  
Intermittent releases  
Value: 0,23 mg/l  
Fresh water sediment

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Value: 5,784 mg/kg  
Marine sediment  
Value: 0,578 mg/kg  
Sewage treatment plant  
Value: 3,18 mg/l  
Soil  
Value: 1,121 mg/kg

## 8.2 Exposure controls

### Engineering measures

Effective exhaust ventilation system  
effective ventilation in all processing areas

### Personal protective equipment

- Eye protection : Safety glasses with side-shields conforming to EN166  
Do not wear contact lenses.  
Ensure that eyewash stations and safety showers are close to the workstation location.
- Hand protection  
Material : Chemical resistant gloves made of butyl rubber or nitrile rubber category III according to EN 374.
- Skin and body protection : Protective suit
- Respiratory protection : Use respirator when performing operations involving potential exposure to vapour of the product.  
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.  
Respirator with a vapour filter (EN 141)
- Protective measures : Avoid contact with skin.  
Wear suitable protective equipment.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Colour : light yellow
- Odour : ammoniacal
- Odour Threshold : not determined
- pH : not determined
- Melting point/freezing point : Not applicable
- Boiling point/boiling range : > 200 °C



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Flash point	: 100 °C
Evaporation rate	: not determined
Upper explosion limit	: Not applicable
Lower explosion limit	: Not applicable
Vapour pressure	: Not applicable
Relative vapour density	: not determined
Density	: 1 g/cm <sup>3</sup> (25 °C)
Bulk density	: not determined
Solubility(ies)	
Solubility in other solvents	: not determined
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: Not applicable
Thermal decomposition	: Method: No data available
Viscosity	
Viscosity, dynamic	: 180 - 300 mPa.s (25 °C)
Viscosity, kinematic	: not determined
Explosive properties	: Not applicable
Oxidizing properties	: Not applicable

### 9.2 Other information

Surface tension	: not determined
Sublimation point	: Not applicable

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

No decomposition if stored and applied as directed.

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### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with the following substances:  
Acids  
Strong oxidizing agents

### 10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

### 10.5 Incompatible materials

Materials to avoid : Strong acids  
Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products : This product may release the following:  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product:

Acute oral toxicity : Acute toxicity estimate : 1.250 mg/kg  
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg  
Method: Calculation method

##### Components:

#### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Acute oral toxicity : LD50 (Rat, male and female): 2.885,3 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): 2.979,7 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

#### **benzyl alcohol:**

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.178 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

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Acute oral toxicity : Acute toxicity estimate : 500 mg/kg  
Method: Converted acute toxicity point estimate

Acute dermal toxicity : Acute toxicity estimate : 1.100 mg/kg  
Method: Converted acute toxicity point estimate

## Skin corrosion/irritation

### Product:

Remarks: Acute dermal irritation/corrosion

### Components:

**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: Corrosive

### **benzyl alcohol:**

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

GLP: yes

## Serious eye damage/eye irritation

### Product:

Remarks: Severe eye irritation

### Components:

**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Method: OECD Test Guideline 405

Result: Risk of serious damage to eyes.

### **benzyl alcohol:**

Species: Rabbit

Method: OECD Test Guideline 405

Result: Eye irritation

GLP: yes

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**Respiratory or skin sensitisation**

**Germ cell mutagenicity**

**Carcinogenicity**

**Reproductive toxicity**

**STOT - single exposure**

**STOT - repeated exposure**

**Aspiration toxicity**

**Components:**

**3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

No aspiration toxicity classification

---

## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

**Components:**

**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 15 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 80 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 0,32 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

**benzyl alcohol:**

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

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GLP: yes

Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 110 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: Directive 67/548/EEC, Annex V, C.1.  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 23 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae : ErC50 (Scenedesmus capricornutum (fresh water algae)): > 50 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: Directive 67/548/EEC, Annex V, C.3.  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 3 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
GLP: yes

## 12.2 Persistence and degradability

### Product:

Biodegradability : Remarks: No data available

### Components:

#### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Biodegradability : Test Type: aerobic  
Result: Not readily biodegradable.  
Method: OECD Test Guideline 301B  
GLP: yes

### 3-aminomethyl-3,5,5-trimethylcyclohexylamine:

Biodegradability : Test Type: aerobic  
Result: Not readily biodegradable.  
Method: Directive 67/548/EEC Annex V, C.4.A.  
GLP: yes

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## 12.3 Bioaccumulative potential

### Product:

Bioaccumulation : Remarks: No data available

### Components:

#### **Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**

Partition coefficient: n-octanol/water : log Pow: 1,34 (25 °C)  
Method: OECD Test Guideline 117  
GLP: yes

#### **3-aminomethyl-3,5,5-trimethylcyclohexylamine:**

Partition coefficient: n-octanol/water : log Pow: 0,99  
Method: OECD Test Guideline 107  
GLP: yes

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

## 12.6 Other adverse effects

### Product:

Additional ecological information : Remarks: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : In accordance with local and national regulations.  
Container hazardous when empty.  
Do not dispose of with domestic refuse.  
Do not mix waste streams during collection.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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## SECTION 14: Transport information

### 14.1 UN number

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**ADR/RID/ADN** : UN 2735

**IMDG** : UN 2735

**IATA** : UN 2735

### 14.2 UN proper shipping name

**ADR/RID/ADN** : AMINES, LIQUID, CORROSIVE, N.O.S.  
(Polyoxypropylene Diamine)

**IMDG** : AMINES, LIQUID, CORROSIVE, N.O.S.  
(Polyoxypropylene Diamine)

**IATA** : Amines, liquid, corrosive, n.o.s.  
(Polyoxypropylene Diamine)

### 14.3 Transport hazard class(es)

**ADR/RID/ADN** : 8

**IMDG** : 8

**IATA** : 8

### 14.4 Packing group

**ADR/RID/ADN**  
Packing group : III  
Classification Code : C7  
Hazard Identification Number : 80  
Labels : 8

**IMDG**  
Packing group : III  
Labels : 8  
EmS Code : F-A, S-B  
Remarks : IMDG Code segregation group 18 - Alkalis

**IATA**  
Packing instruction (cargo aircraft) : 856  
Packing instruction (passenger aircraft) : 852  
Packing group : III  
Labels : 8

### 14.5 Environmental hazards

**ADR/RID/ADN**  
Environmentally hazardous : no

**IMDG**  
Marine pollutant : no

### 14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

- REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable
- REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).
- REACH - List of substances subject to authorisation (Annex XIV) : Not applicable
- Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.  
Not applicable

### 15.2 Chemical safety assessment

Not applicable

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## SECTION 16: Other information

### Full text of H-Statements

- H302 : Harmful if swallowed.  
H312 : Harmful in contact with skin.  
H314 : Causes severe skin burns and eye damage.  
H317 : May cause an allergic skin reaction.  
H318 : Causes serious eye damage.  
H319 : Causes serious eye irritation.  
H332 : Harmful if inhaled.  
H412 : Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

- Acute Tox. : Acute toxicity  
Aquatic Chronic : Chronic aquatic toxicity  
Eye Dam. : Serious eye damage  
Eye Irrit. : Eye irritation  
Skin Corr. : Skin corrosion  
Skin Sens. : Skin sensitisation

### Further information

- Training advice : Provide adequate information, instruction and training for operators.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other



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materials or in any process, unless specified in the text.