SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

IB2 Epoxy Infusion Bio Resin

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

1.1. Product identifier

Product name : IB2 Epoxy Infusion Bio Resin

Product code : IB2-A

EPOXY RESIN

UFI : R0A4-19C3-H00N-M3VP

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

Recommended use : resin

Uses advised against : data not available

1.3. Details of the supplier of the safety data sheet

Company	:	Easy Composites Ltd Unit 39 Park Hall Business Village, Longton, Stoke-on-Trent, ST3 5XA
Telephone		01782454499
E-mail address		sales@easycomposites.com

1.4. Emergency telephone number : . 01782 454499 (office hours only)

Other emergency numbers

Health and Safety Executive (HSE) Chemicals Regulation Directorate - Telephone: +44 151 951 3317 -

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Skin irritation, Category 2 (Skin Irrit. 2, H315).

Serious eye damage, Category 1 (Eye Dam. 1, H318).

Skin sensitisation, Category 1 (Skin Sens. 1, H317).

Hazardous to the aquatic environment - Chronic hazard, Category 2 (Aquatic Chronic 2, H411).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :

GHS05 GHS09 GHS07

Signal Word :

DANGER

Product identifiers :

EC 216-823-5	2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE
EC 219-371-7	BUTANEDIOLDIGLYCIDYL ETHER
EC 701-263-0	REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIRANE

Additional labeling :

EUH205 Contains epoxy constituents. May produce an allergic reaction.

Hazard statements :

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements - General :

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

P102 Keep out of reach of children.

Precautionary statements - Prevention :

P272 Contaminated work clothing should not be allowed out of the workplace.

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

Precautionary statements - Response :

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/...

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

Precautionary statements - Disposal :

P501 Dispose of contents/container to hazardous waste.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

The mixture does not contain substances> = 0.1% with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	Classification (EC) 1272/2008	Note	%
CAS: 1675-54-3 EC: 216-823-5 REACH: 01-2119456619-26-XXXX 2,2'-[(1-METHYLETHYLIDENE)BIS(4 ,1-PHENYLENEOXYMETHYLENE)]BISOX IRANE	GHS07, GHS09 Wng Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Irrit. 2, H319 Aquatic Chronic 2, H411		50 <= x % < 100
CAS: 2425-79-8 EC: 219-371-7 REACH: 01-2119494060-45-XXXX BUTANEDIOLDIGLYCIDYL ETHER	GHS07, GHS05 Dgr Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Skin Sens. 1, H317 Eye Dam. 1, H318 Acute Tox. 4, H332 Aquatic Chronic 3, H412		10 <= x % < 25
EC: 701-263-0 REACH: 01-2119454392-40-XXXX REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLEN EOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLEN EOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BE NZYL]PHENOXY}METHYL)OXIRANE	GHS07, GHS09 Wng Skin Irrit. 2, H315 Skin Sens. 1A, H317 Aquatic Chronic 2, H411		10 <= x % < 25

Specific concentration limits:

Identification	Specific concentration limits	ATE
CAS: 1675-54-3	Skin Irrit. 2: H315 >=5%	dermal: ATE = 2000 mg/kg BW

EC: 216-823-5 REACH: 01-2119456619-26-XXXX 2,2'-[(1-METHYLETHYLIDENE)BIS(4 ,1-PHENYLENEOXYMETHYLENE)]BISOX IRANE	Eye Irrit. 2: H319 C>= 5%	oral: ATE = 11400 mg/kg BW

Information on ingredients :

(Full text of H-phrases: see section 16)

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. description of first aid measures

In the event of exposure by inhalation :

If inhaled, move the patient to fresh air and keep warm and rest.

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

Flush with large amounts of water. Remove contact lenses if the victim is. Continue to rinse. Seek medical attention if symptoms persist.

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated aera is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Seek medical attention immediately, showing the label.

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

No data available.

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

Information for the doctor :

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to remain under medical supervision for 48 hours.

Contact a specialist for treatment poisoning if large quantities have been ingested or inhaled.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- foam
- powder

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO_2)

5.3. Advice for firefighters

Firefighters should wear suitable protective clothing and a respirator mask with self- full operated in positive pressure mode.

Wear conform with the European standard EN 469.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid any contact with the skin and eyes.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this mixture.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid eye contact with this mixture at all times.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep out of reach of children.

Store in original container protected from direct sunlight in a dry, cool and well ventilated area away from heat sources.

Keep container tightly closed in a dry place.

Store away from heat and cold.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

Scope advised : Injection Moulding - infusion

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

No data available.

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Short term local effects.
DNEL :	8.3 µg of substance/cm2
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	104.15 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 29.39 mg of substance/m3

Final use: **Man exposed via the environment.**
Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 6.25 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 62.5 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 8.7 mg of substance/m3

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Final use: **Workers.**
Exposure method: Dermal contact.
Potential health effects: Short term systemic effects.
DNEL : 8.3 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 8.3 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Short term systemic effects.
DNEL : 12.3 mg of substance/m3

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 12.3 mg of substance/m3

Final use: **Consumers.**
Exposure method: Ingestion.
Potential health effects: Short term systemic effects.
DNEL : 0.75 mg/kg body weight/day

Exposure method: Ingestion.
Potential health effects: Long term systemic effects.
DNEL : 0.75 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Short term systemic effects.
DNEL : 3.6 mg/kg body weight/day

Exposure method: Dermal contact.
Potential health effects: Long term systemic effects.
DNEL : 3.6 mg/kg body weight/day

Exposure method: Inhalation.
Potential health effects: Short term systemic effects.
DNEL : 0.75 mg of substance/m3

Exposure method: Inhalation.
Potential health effects: Long term systemic effects.
DNEL : 0.75 mg of substance/m3

Predicted no effect concentration (PNEC):

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND

2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Environmental compartment:	Soil.
PNEC :	0.237 mg/kg
Environmental compartment:	Fresh water.
PNEC :	0.003 mg/l
Environmental compartment:	Sea water.
PNEC :	0.0003 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.0254 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	0.294 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.0294 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10 mg/l

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Environmental compartment:	Soil.
PNEC :	0.065 mg/kg
Environmental compartment:	Fresh water.
PNEC :	6 µg/l
Environmental compartment:	Sea water.
PNEC :	1 µg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.013 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	0.341 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.034 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10 mg/l

8.2. Exposure controls

Use only with adequate ventilation or provided with ventilation at the source.

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :

Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.
Use eye protectors designed to protect against liquid splashes
Before handling, wear safety goggles with protective sides accordance with standard EN166.
In the event of high danger, protect the face with a face shield.
Prescription glasses are not considered as protection.

Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.
Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.
Gloves must be selected according to the application and duration of use at the workstation.
Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
Type of gloves recommended :
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Butyl Rubber (Isobutylene-isoprene copolymer)

- **Body protection**

Avoid skin contact.
Wear suitable protective clothing.
In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.
In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.
Work clothing worn by personnel shall be laundered regularly.
After contact with the product, all parts of the body that have been soiled must be washed.

- **Respiratory protection**

Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :
Mask with filter type A, B, E, K, P
Attention! If the protection group is insufficient.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state

Physical state :	Fluid liquid.

Colour

Color :	colorless to light yellow

Odour

Odour threshold :	Not stated.

Melting point

Melting point/melting range :	Not relevant.

Freezing point

Freezing point / Freezing range :	Not stated.

Boiling point or initial boiling point and boiling range

Boiling point/boiling range :	Not relevant.

Flammability

Flammability (solid, gas) :	Not stated.

Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) :	Not stated.
Explosive properties, upper explosivity limit (%) :	Not stated.

Flash point

Flash Point Interval :	FP > 100°C.

Auto-ignition temperature

Self-ignition temperature :	Not relevant.

Decomposition temperature

Decomposition point/decomposition range :	Not relevant.

pH

pH (aqueous solution) :	Not stated.
pH :	Not relevant.

Kinematic viscosity

Viscosity :	830 ± 170 mPa.s @ 25 °C

Solubility

Water solubility :	Insoluble.
Fat solubility :	Not stated.

Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water :	Not stated.

Vapour pressure

Vapour pressure (50°C) :	Not relevant.

Density and/or relative density

Density :	1.16 ± 0.02 @ 20 °C

Relative vapour density

Vapour density :	Not stated.

9.2. Other information

Index of refraction :	1.5491 ± 0.002 @ 25 °C

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :
- frost
- heat

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

The thermal decomposition may release/form :
- carbon monoxide (CO)
- carbon dioxide (CO2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

May cause irreversible damage to the skin; namely inflammation of the skin or the formation of erythema and eschar or oedema following exposure up to four hours.

May have irreversible effects on the eyes, such as tissue damage in the eye, or serious physical decay of sight, which is not fully reversible by the end of observation at 21 days.

Serious eye damage is typified by the destruction of cornea, persistent corneal opacity and iritis.

May cause an allergic reaction by skin contact.

Based on the properties of the epoxy constituent(s) and considering toxicological data on similar preparations, this preparation may be a skin sensitiser and a respiratory tract sensitiser as well as an irritant.

Constituents with a low molecular weight irritate the eyes, mucous membranes and the skin

Repeated contact with the skin may cause irritation and hypersensitisation, possibly in combination with other epoxide compounds.

11.1.1. Substances

Acute toxicity :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Oral route :	LD50 > 2000 mg/kg bodyweight/day Species : Rat
Dermal route :	LD50 > 2000 mg/kg bodyweight/day Species : Rabbit

BUTANEDIOLDIGLYCIDYL ETHER (CAS: 2425-79-8)

Oral route :	LD50 > 1000 mg/kg bodyweight/day Species : Rat

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Oral route : LD50 = 11400 mg/kg bodyweight/day
Species : Rat

Dermal route : LD50 = 2000 mg/kg bodyweight/day
Species : Rat

Skin corrosion/skin irritation :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)
Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious damage to eyes/eye irritation :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
Conjunctival redness : Average score = 0
Species : Rabbit

Conjunctival oedema : Average score = 0
Species : Rabbit
OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitisation :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
Buehler Test : Sensitiser.
Species : Guinea pig

Germ cell mutagenicity :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
Mutagenesis (in vivo) : Negative.
Species : Mouse

Species : Bacteria

Ames test (in vitro) : Positive.

Carcinogenicity :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
Carcinogenicity Test : Negative.
No carcinogenic effect.
Species : Mouse
Other guideline

Reproductive toxicant :

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR
No toxic effect for reproduction
Study on development : Species : Rabbit
Other guideline

11.1.2. Mixture

Respiratory or skin sensitisation :

Contains epoxy compounds. May cause an allergic reaction.

11.2. Information on other hazards

Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 1675-54-3 : IARC Group 3 : The agent is not classifiable as to its carcinogenicity to humans.

SECTION 12 : ECOLOGICAL INFORMATION

Toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.1. Substances

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Fish toxicity :	LC50 = 1.3 mg/l Duration of exposure : 96 h OECD Guideline 203 (Fish, Acute Toxicity Test)
Crustacean toxicity :	EC50 = 2.1 mg/l Species : Daphnia sp. Duration of exposure : 48 h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
	NOEC = 0.3 mg/l Species : Daphnia magna Duration of exposure : 21 days OECD Guideline 211 (Daphnia magna Reproduction Test)
Algae toxicity :	ECr50 > 11 mg/l Duration of exposure : 72 h

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Fish toxicity :	LC50 = 2.54 mg/l Duration of exposure : 96 h
Crustacean toxicity :	EC50 = 2.55 mg/l Species : Daphnia sp. Duration of exposure : 48 h OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Algae toxicity :	ECr50 > 1000 mg/l Species : Selenastrum capricornutum Duration of exposure : 72 h OECD Guideline 201 (Alga, Growth Inhibition Test)

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

12.2.1. Substances

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Biodegradability :	Non-rapidly degradable.

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Biodegradability :	no degradability data is available, the substance is considered as not degrading quickly.

12.3. Bioaccumulative potential

12.3.1. Substances

REACTION MASS OF 2,2'-[METHYLENEBIS(2,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2,2'-[METHYLENEBIS(4,1-PHENYLENEOXYMETHYLENE)]BIS(OXIRANE) AND 2-({2-[4-(OXIRAN-2-YLMETHOXY)BENZYL]PHENOXY}METHYL)OXIR

Octanol/water partition coefficient :	log Koe = 3.3
Bioaccumulation :	BCF = 150

2,2'-[(1-METHYLETHYLIDENE)BIS(4,1-PHENYLENEOXYMETHYLENE)]BISOXIRANE (CAS: 1675-54-3)

Octanol/water partition coefficient :	log Koe <= 3.78
Bioaccumulation :	BCF < 100.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 2 : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2014/955/EC, Directive 2008/98/EEC on hazardous waste) :

07 01 08 * other still bottoms and reaction residues

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2021 - IMDG 2020 [40-20] - ICAO/IATA 2022 [63]).

14.1. UN number or ID number

3082

14.2. UN proper shipping name

UN3082=ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane, reaction mass of
2,2'-[methylenebis(2,1-phenyleneoxymethylene)]bis(oxirane) and 2,2'-[methylenebis(4,1-phenyleneoxymethylene)]bis(oxirane) and
2-({2-[4-(oxiran-2-ylmethoxy)benzyl]phenoxy}methyl)oxirane)

14.3. Transport hazard class(es)

- Classification :

9

14.4. Packing group

III

14.5. Environmental hazards

- Environmentally hazardous material :

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	9	M6	III	9	90	5 L	274 335 375 601	E1	3	-

*Not subject to this regulation if Q <= 5 l / 5 kg (ADR 3.3.1 - DS 375)

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation
	9	-	III	5 L	F-A. S-F	274 335 969	E1	Category A	-

*Not subject to this regulation if Q <= 5 l / 5 kg (IMDG 3.3.1 - 2.10.2.7)

IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ
	9	-	III	964	450 L	964	450 L	A97 A158 A197 A215	E1
	9	-	III	Y964	30 kg G	-	-	A97 A158 A197 A215	E1

*Not subject to this regulation if Q <= 5 l / 5 kg (IATA 4.4.4 - DS A197)

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

Marine pollutant (IMDG 3.1.2.9):(2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bisoxirane)

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Classification and labelling information included in section 2:

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2022/692 (ATP 18)

Container information:

The mixture does not contain any substance restricted under Annex XVII of Regulation (EC) No. 1907/2006 (REACH): https://echa.europa.eu/substances-restricted-under-reach.

Particular provisions :

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 2 : Hazardous for water.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

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.
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.

Abbreviations and acronyms :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.
LC50 : The concentration of a test substance resulting in 50% lethality in a given period.
EC50 : The effective concentration of substance that causes 50% of the maximum response.
ECr50 : The effective concentration of substance that causes 50% reduction in growth rate.
NOEC : The concentration with no observed effect.
REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.
ATE : Acute Toxicity Estimate
BW : Body Weight
DNEL : Derived No-Effect Level
PNEC : Predicted No-Effect Concentration
UFI : Unique formulation identifier.
ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
WGK : Wassergefahrdungsklasse (Water Hazard Class).
GHS05 : Corrosion
GHS07 : Exclamation mark
GHS09 : Environment
PBT: Persistent, bioaccumulable and toxic.
vPvB : Very persistent, very bioaccumulable.
SVHC : Substances of very high concern.

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 2020/878)

IB2 Epoxy Infusion Bio Hardener

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

1.1. Product identifier

Product name : IB2 Epoxy Infusion Bio Hardener

Product code : IB2-B

EPOXY RESIN

UFI: XKK4-N9CT-5004-R854

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

Recommended use : Hardener

Uses advised against : data not available

1.3. Details of the supplier of the safety data sheet

Company	:	Easy Composites Ltd Unit 39 Park Hall Business Village, Longton, Stoke-on-Trent, ST3 5XA
Telephone		01782454499
E-mail address		sales@easycomposites.com

1.4. Emergency telephone number : . 01782 454499 (office hours only)

Other emergency numbers

Health and Safety Executive (HSE) Chemicals Regulation Directorate - Telephone: +44 151 951 3317 -

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

Acute oral toxicity, Category 4 (Acute Tox. 4, H302).
Acute inhalation toxicity, Category 4 (Acute Tox. 4, H332).
Skin corrosion, Category 1A (Skin Corr. 1A, H314).
Serious eye damage, Category 1 (Eye Dam. 1, H318).
Skin sensitisation, Category 1 (Skin Sens. 1, H317).
Specific target organ toxicity (single exposure), Category 3 (STOT SE 3, H335).
Hazardous to the aquatic environment - Chronic hazard, Category 3 (Aquatic Chronic 3, H412).
This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard pictograms :

GHS05 GHS07

Signal Word :

DANGER

Product identifiers :

EC 239-556-6	METHYLPENTANE DIAMINE
EC 216-032-5	M-PHENYLENEBIS(METHYLAMINE)

EC 500-105-6	PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA
Hazard statements :	
H302 + H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.
Precautionary statements - General :	
P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
Precautionary statements - Prevention :	
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/ ...
Precautionary statements - Response :	
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [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/...
Precautionary statements - Storage :	
P405	Store locked up.
Precautionary statements - Disposal :	
P501	Dispose of contents/container to hazardous waste.

2.3. Other hazards

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC) >= 0.1% published by the European CHemicals Agency (ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table
The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.
The mixture does not contain substances> = 0.1% with endocrine disrupting properties in accordance with the criteria of the Delegated Regulation (EU) 2017/2100 of the Commission or Regulation (EU) 2018/605 of the Commission.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

Composition :

Identification	Classification (EC) 1272/2008	Note	%
CAS: 15520-10-2 EC: 239-556-6 REACH: 01-2119976310-41-XXXX METHYLPENTANE DIAMINE	GHS07, GHS05 Dgr Acute Tox. 4, H302 Skin Corr. 1A, H314 Acute Tox. 4, H332 STOT SE 3, H335		50 <= x % < 100
CAS: 1477-55-0 EC: 216-032-5 REACH: 01-2119480150-50-XXXX M-PHENYLENEBIS(METHYLAMINE)	GHS07, GHS05 Dgr Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1, H317 Acute Tox. 4, H332 Aquatic Chronic 3, H412	[1]	25 <= x % < 50
CAS: 39423-51-3 EC: 500-105-6 REACH: 01-2119556886-20-XXXX PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA	GHS07, GHS05, GHS09 Dgr Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Chronic 2, H411		2.5 <= x % < 10

Specific concentration limits:

Identification	Specific concentration limits	ATE
CAS: 15520-10-2 EC: 239-556-6 REACH: 01-2119976310-41-XXXX METHYLPENTANE DIAMINE	Eye Dam. 1: H318 C>= 5% Eye Irrit. 2: H319 1% <= C < 5%	inhalation: ATE = 11 mg/l 4h (vapours) oral: ATE = 1690 mg/kg BW
CAS: 1477-55-0 EC: 216-032-5 REACH: 01-2119480150-50-XXXX M-PHENYLENEBIS(METHYLAMINE)	Eye Dam. 1: H318 C>= 5% Eye Irrit. 2: H319 1% <= C < 5%	inhalation: ATE = 1.34 mg/l 4h (dust/mist) oral: ATE = 930 mg/kg BW
CAS: 39423-51-3 EC: 500-105-6 REACH: 01-2119556886-20-XXXX PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA		oral: ATE = 550 mg/kg BW

Information on ingredients :

(Full text of H-phrases: see section 16)

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. description of first aid measures

In the event of exposure by inhalation :

In the event of massive inhalation, remove the person exposed to fresh air. Keep warm and at rest.

If the person is unconscious, place in recovery position. Notify a doctor in all events, to ascertain whether observation and supportive hospital care will be necessary.

If breathing is irregular or has stopped, effect mouth-to-mouth resuscitation and call a doctor.

Do not proceed with mouth-to-mouth or mouth-to-nose resuscitation.Use the appropriate equipment.

If breathing is irregular or stopped, that qualified personnel provide artificial respiration and call a doctor.

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

Flush with large amounts of water. Remove contact lenses if the victim is. Continue to rinse. Seek medical attention if symptoms persist.

In the event of splashes or contact with skin :

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Remove any soiled or splashed clothing immediately.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

In the event of an allergic reaction, seek medical attention.

If the contaminated aera is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water, administer activated medical charcoal and consult a doctor.

Seek medical attention immediately, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.

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

Information for the doctor :

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to remain under medical supervision for 48 hours.

Contact a specialist for treatment poisoning if large quantities have been ingested or inhaled.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO2)
- nitrogen oxide (NO)
- nitrogen dioxide (NO2)

5.3. Advice for firefighters

Firefighters should wear suitable protective clothing and a respirator mask with self- full operated in positive pressure mode.

Wear conform with the European standard EN 469.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid inhaling the vapors.

Avoid any contact with the skin and eyes.

If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Neutralise with an acidic decontaminant.

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

Clean preferably with a detergent, do not use solvents.

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

Individuals with a history of skin sensitisation should not, under any circumstance, handle this mixture.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Emergency showers and eye wash stations will be required in facilities where the mixture is handled constantly.

Fire prevention :

Handle in well-ventilated areas.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

In all cases, recover emissions at source.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep out of reach of children.
Keep the container tightly closed in a dry, well-ventilated place.
Keep away from food and drink, including those for animals.
Store in original container protected from direct sunlight in a dry, cool and well ventilated area away from heat sources.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

Scope advised : Injection Moulding - infusion

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits :

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :	
1477-55-0			0.1 mg/m3	Skin		

- France (INRS - Outils 65 / 2021-1849, 2021-1763, decree of 09/12/2021) :

CAS	VME-ppm :	VME-mg/m3 :	VLE-ppm :	VLE-mg/m3 :	Notes :	TMP No :
1477-55-0	-	-	-	0.1	-	-

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	4 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	4.9 mg of substance/m3
Final use:	**Consumers.**
Exposure method:	Ingestion.
Potential health effects:	Long term systemic effects.
DNEL :	0.5 mg/kg body weight/day

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term systemic effects.
DNEL :	0.33 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Long term systemic effects.
DNEL :	1.2 mg of substance/m3
Exposure method:	Inhalation.
Potential health effects:	Long term local effects.
DNEL :	0.2 mg of substance/m3

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Final use:	**Workers.**
Exposure method:	Dermal contact.
Potential health effects:	Long term local effects.
DNEL :	1.5 mg/kg body weight/day
Exposure method:	Inhalation.
Potential health effects:	Short term local effects.
DNEL :	0.5 mg of substance/m3

Exposure method:	Inhalation.
Potential health effects:	Long term local effects.
DNEL :	0.25 mg of substance/m3

Predicted no effect concentration (PNEC):

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Environmental compartment:	Soil.
PNEC :	0.002 mg/kg
Environmental compartment:	Fresh water.
PNEC :	0.004 mg/l
Environmental compartment:	Sea water.
PNEC :	0.00044 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.044 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	0.0224 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.00224 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10 mg/l

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Environmental compartment:	Soil.
PNEC :	0.045 mg/kg
Environmental compartment:	Fresh water.
PNEC :	0.094 mg/l
Environmental compartment:	Sea water.
PNEC :	0.009 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.152 mg/l
Environmental compartment:	Fresh water sediment.
PNEC :	0.43 mg/kg
Environmental compartment:	Marine sediment.
PNEC :	0.043 mg/kg
Environmental compartment:	Waste water treatment plant.
PNEC :	10 mg/l

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Environmental compartment:	Fresh water.
PNEC :	0.42 mg/l
Environmental compartment:	Sea water.
PNEC :	0.042 mg/l
Environmental compartment:	Intermittent waste water.
PNEC :	0.42 mg/l

8.2. Exposure controls

Use only with adequate ventilation or provided with ventilation at the source.

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :

Use personal protective equipment that is clean and has been properly maintained.
Store personal protective equipment in a clean place, away from the work area.
Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.
Use eye protectors designed to protect against liquid splashes
Before handling, wear safety goggles with protective sides accordance with standard EN166.
In the event of high danger, protect the face with a face shield.
Prescription glasses are not considered as protection.
Individuals wearing contact lenses should wear prescription glasses during work where they may be exposed to irritant vapours.
Provide eyewash stations in facilities where the product is handled constantly.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.
Gloves must be selected according to the application and duration of use at the workstation.
Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.
Type of gloves recommended :
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Butyl Rubber (Isobutylene-isoprene copolymer)

- Body protection

Avoid skin contact.
Wear suitable protective clothing.
In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.
In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.
Wear suitable protective clothing, in particular overalls and boots. These items must be kept in good condition and cleaned after use.
Work clothing worn by personnel shall be laundered regularly.
After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid inhaling vapors.
If the ventilation is insufficient, wear appropriate breathing apparatus.
When workers are confronted with concentrations that are above occupational exposure limits, they must wear a suitable, approved, respiratory protection device.
Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 :
- A1 (Brown)
Mask with filter type A, B, E, K, P
Attention! If the protection group is insufficient.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical state

Physical state :	Fluid liquid.

Colour

Color :	colorless to light yellow

Odour

Odour threshold :	Not stated.

Melting point

Melting point/melting range :	Not relevant.

Freezing point

Freezing point / Freezing range :	Not stated.

Boiling point or initial boiling point and boiling range

Boiling point/boiling range :	Not relevant.

Flammability

Flammability (solid, gas) :	Not stated.

Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) :	Not stated.
Explosive properties, upper explosivity limit (%) :	Not stated.

Flash point

Flash Point Interval :	FP > 100°C.

Auto-ignition temperature

Self-ignition temperature :	Not relevant.

Decomposition temperature

Decomposition point/decomposition range :	Not relevant.

pH

pH (aqueous solution) :	Not stated.
pH :	Not stated.
	Slightly basic.

Kinematic viscosity

Viscosity :	5 ± 2 mPa.s @ 25 °C

Solubility

Water solubility :	Soluble.
Fat solubility :	Not stated.

Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water :	Not stated.

Vapour pressure

Vapour pressure (50°C) :	Not relevant.

Density and/or relative density

Density :	0.94 ± 0.02 @ 20°C

Relative vapour density

Vapour density :	Not stated.

Particle characteristics

The mixture does not contain nanoforms.

9.2. Other information

Index of refraction :	1.4980 ± 0.002 @ 25 °C
% VOC :	0
Miscibility	Alcohols, aromatic solvents

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :
- contact with air
- humidity

10.5. Incompatible materials

Keep away from :
- strong oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :
- carbon monoxide (CO)
- carbon dioxide (CO2)
- nitrogen oxide (NO)

- nitrogen dioxide (NO_2)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Harmful if swallowed.

Harmful by inhalation.

May cause irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following exposure for up to three minutes.

Corrosive reactions are typified by ulcers, bleeding, bloody scabs, and, by the end of observation at 14 days, by discolouration due to blanching of the skin, complete areas of alopecia, and scars.

Respiratory tract irritation may occur, together with symptoms such as coughing, choking and breathing difficulties.

May cause an allergic reaction by skin contact.

11.1.1. Substances

Acute toxicity :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Oral route :	LD50 = 550 mg/kg bodyweight/day Species : Rat OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)
Dermal route :	LD50 > 1000 mg/kg bodyweight/day Species : Rat OECD Guideline 402 (Acute Dermal Toxicity)

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Oral route :	LD50 = 930 mg/kg bodyweight/day Species : Rat OECD Guideline 401 (Acute Oral Toxicity)
Dermal route :	LD50 > 3100 mg/kg bodyweight/day Species : Rabbit
Inhalation route (Dusts/mist) :	LC50 = 1.34 mg/l Species : Rat OECD Guideline 403 (Acute Inhalation Toxicity) Duration of exposure : 4 h

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Oral route :	LD50 = 1690 mg/kg bodyweight/day Species : Rat
Inhalation route (Vapours) :	LC50 = 11 mg/l Species : Rat Duration of exposure : 4 h

Skin corrosion/skin irritation :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Species : Rabbit
OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Corrosivity :	Causes severe skin burns. Species : Rat

Respiratory or skin sensitisation :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Guinea Pig Maximisation Test (GMPT) :	Non-sensitiser. Species : Guinea pig OECD Guideline 406 (Skin Sensitisation)

Germ cell mutagenicity :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Mutagenesis (in vivo) : Negative.
Species : Mouse
OECD Guideline 474 (Mammalian Erythrocyte Micronucleus Test)

OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Ames test (in vitro) : Negative.
With or without metabolic activation.

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

No mutagenic effect.

Reproductive toxicant :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

No toxic effect for reproduction

Study on fertility : Species : Rat
OECD Guideline 414 (Prenatal Developmental Toxicity Study)

Study on development : Species : Rat
OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

No toxic effect for reproduction

Specific target organ systemic toxicity - repeated exposure :

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Oral route : C >= 100 mg/kg bodyweight/day
Species : Rat
Duration of exposure : 90 days
OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Dermal route : C >= 160 mg/kg bodyweight/day
Species : Rat
Duration of exposure : 90 days
OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Oral route : C = 600 mg/kg bodyweight/day
Species : Rat
Duration of exposure : 28 days
OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

11.1.2. Mixture

No toxicological data available for the mixture.

11.2. Information on other hazards

SECTION 12 : ECOLOGICAL INFORMATION

Harmful to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.1. Substances

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Fish toxicity : LC50 > 100 mg/l
Species : Oncorhynchus mykiss
Duration of exposure : 96 h
OCDE Ligne directrice 203 (Poisson, essai de toxicité aiguë)

Crustacean toxicity : EC50 = 13 mg/l
Species : Daphnia magna

Duration of exposure : 48 h
OCDE Ligne directrice 202 (Daphnia sp., essai d'immobilisation immédiate)

Algae toxicity : ECr50 = 4.4 mg/l
Species : Selenastrum capricornutum
Duration of exposure : 72 h
OCDE Ligne directrice 201 (Algues, Essai d'inhibition de la croissance)

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Fish toxicity : LC50 = 87.6 mg/l
Species : Oryzias latipes
Duration of exposure : 96 h
OCDE Ligne directrice 203 (Poisson, essai de toxicité aiguë)

EC50 mg/l
Duration of exposure : 21 jours

Crustacean toxicity : EC50 = 15.2 mg/l
Species : Daphnia magna
Duration of exposure : 48 h
OCDE Ligne directrice 202 (Daphnia sp., essai d'immobilisation immédiate)

EC50 mg/l
Species : Daphnia magna
Duration of exposure : 21 jours
OCDE Ligne directrice 211 (Daphnia magna, essai de reproduction)

NOEC = 4.7 mg/l
Species : Daphnia magna
Duration of exposure : 21 jours
OCDE Ligne directrice 211 (Daphnia magna, essai de reproduction)

Algae toxicity : ECr50 = 20.3 mg/l
Species : Pseudokirchnerella subcapitata
Duration of exposure : 72 h
OCDE Ligne directrice 201 (Algues, Essai d'inhibition de la croissance)

NOEC = 10.5 mg/l
Species : Pseudokirchnerella subcapitata
Duration of exposure : 72 h
OCDE Ligne directrice 201 (Algues, Essai d'inhibition de la croissance)

Aquatic plant toxicity : Autres lignes directrices

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Fish toxicity : LC50 = 1825 mg/l
Species : Pimephales promelas
Duration of exposure : 96 h

Crustacean toxicity : EC50 = 19.8 mg/l
Species : Daphnia magna
Duration of exposure : 48 h

NOEC = 4.16 mg/l
Species : Daphnia magna
Duration of exposure : 21 jours

Algae toxicity : ECr50 > 100 mg/l
Species : Pseudokirchnerella subcapitata
Duration of exposure : 72 h

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

12.2. Persistence and degradability

12.2.1. Substances

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Biodegradability : Non-rapidly degradable.

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Biodegradability : Non-rapidly degradable.

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Biodegradability : Rapidly degradable.

12.3. Bioaccumulative potential

12.3.1. Substances

PROPYLIDYNETRIMETHANOL, PROPOXYLATED, REACTION PRODUCTS WITH AMMONIA (CAS: 39423-51-3)

Octanol/water partition coefficient : log Koe = -1.13

M-PHENYLENEBIS(METHYLAMINE) (CAS: 1477-55-0)

Octanol/water partition coefficient : log Koe = 0.18
OCDE Ligne directrice 107 (Coefficient de partage (n-octanol/eau): méthode par agitation en flacon)

Bioaccumulation : BCF = 2.69

METHYLPENTANE DIAMINE (CAS: 15520-10-2)

Octanol/water partition coefficient : log Koe <= 1

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 2 : Hazardous for water.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.

Codes of wastes (Decision 2014/955/EC, Directive 2008/98/EEC on hazardous waste) :

07 01 08 * other still bottoms and reaction residues

SECTION 14 : TRANSPORT INFORMATION

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2023 - IMDG 2022 [41-22] - ICAO/IATA 2023 [64]).

14.1. UN number or ID number

2735

14.2. UN proper shipping name

UN2735=POLYAMINES, LIQUID, CORROSIVE, N.O.S.
(methylpentane diamine, m-phenylenebis(methylamine))

14.3. Transport hazard class(es)

- Classification :

8

14.4. Packing group

I

14.5. Environmental hazards

-

14.6. Special precautions for user

ADR/RID	Class	Code	Pack gr.	Label	Ident.	LQ	Provis.	EQ	Cat.	Tunnel
	8	C7	I	8	88	0	274	E0	1	E
IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation	
	8	-	I	0	F-A. S-B	274	E0	Category A	SGG18 SG35	
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	8	-	I	850	0.5 L	854	2.5 L	A3 A803	E0	
	8	-	I	Forbidden	Forbidden	-	-	A3 A803	E0	

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.
For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

14.7. Maritime transport in bulk according to IMO instruments

No data available.

SECTION 15: Regulatory information

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

Classification and labelling information included in section 2:

The following regulations have been used:
- EU Regulation No. 1272/2008 amended by EU Regulation No. 2022/692 (ATP 18)

Container information:

Packaging to be fitted with child-resistant fastenings (see EC Regulation No. 1272/2008, Annex II, Part 3).
Containers to be fitted with a tactile warning of danger (see EC Regulation No. 1272/2008, Annex II, Part 3).

Restrictions applied under Title VIII of Regulation (EC) No. 1907/2006 (REACH):

The mixture does not contain any substance restricted under Annex XVII of Regulation (EC) No. 1907/2006 (REACH): https://echa.europa.eu/substances-restricted-under-reach.

Explosives precursors :

The mixture does not contain any substance subject to Regulation (EU) 2019/1148 on the marketing and use of explosives precursors.

Particular provisions :

No data available.

German regulations concerning the classification of hazards for water (WGK, AwSV Annex I, KBws) :

WGK 2 : Hazardous for water.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.
The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.
It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.
The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Wording of the phrases mentioned in section 3 :

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.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Abbreviations and acronyms :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.
LC50 : The concentration of a test substance resulting in 50% lethality in a given period.
EC50 : The effective concentration of substance that causes 50% of the maximum response.
ECr50 : The effective concentration of substance that causes 50% reduction in growth rate.
NOEC : The concentration with no observed effect.
REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.
ATE : Acute Toxicity Estimate
BW : Body Weight
DNEL : Derived No-Effect Level
PNEC : Predicted No-Effect Concentration
UFI : Unique formulation identifier.
STEL : Short-term exposure limit
TWA : Time Weighted Averages
TMP : French Occupational Illness table
TLV : Threshold Limit Value (exposure)
AEV : Average Exposure Value.
ADR : European agreement concerning the international carriage of dangerous goods by Road.
IMDG : International Maritime Dangerous Goods.
IATA : International Air Transport Association.
ICAO : International Civil Aviation Organisation
RID : Regulations concerning the International carriage of Dangerous goods by rail.
WGK : Wassergefahrdungsklasse (Water Hazard Class).
GHS05 : Corrosion
GHS07 : Exclamation mark
PBT: Persistent, bioaccumulable and toxic.
vPvB : Very persistent, very bioaccumulable.
SVHC : Substances of very high concern.