



SAFETY DATA SHEET

BELZONA® 5831 (ST-BARRIER) BASE

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

1.1. Product identifier

Product name BELZONA® 5831 (ST-BARRIER) BASE

Product number SN2542

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

Identified uses High performance barrier coating for protection of metallic and non-metallic surfaces against attack from aqueous solutions. For industrial use only.

Uses advised against The product should not be used for purposes other than those recommended in the appropriate Instructions For Use (IFU) leaflet.

1.3. Details of the supplier of the safety data sheet

Supplier Belzona Polymerics Limited
Claro Road, Harrogate
HG1 4DS
United Kingdom
+44 1423 567641
sds@belzona.com

Manufacturer Belzona Polymerics Limited
Claro Road, Harrogate
HG1 4DS
United Kingdom
+44 1423 567641
sds@belzona.com

1.4. Emergency telephone number

Emergency telephone VelocityEHS: +1 813-248-0585

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (SI 2019 No. 720)

Physical hazards Not Classified

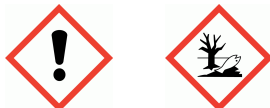
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317

Environmental hazards Aquatic Chronic 2 - H411

Reference The full text for all hazard statements is displayed in Section 16.

2.2. Label elements

Hazard pictograms



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Signal word	Warning
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing and eye protection. P302+P352 IF ON SKIN: Wash with plenty of water. 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 CENTRE or doctor. P501 Dispose of contents/ container in accordance with national regulations.
Supplemental label information	Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
Contains	BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE, BISPHENOL F- EPOXY RESIN

2.3. Other hazards

Based on information received from our suppliers no PBT or vPvB substances are intentionally added to this product.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE	10-30%
CAS number: 1675-54-3	EC number: 216-823-5
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	
BISPHENOL F- EPOXY RESIN	10-30%
CAS number: 9003-36-5	EC number: 500-006-8
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411	

The full text for all hazard statements is displayed in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information	In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation	Remove to fresh air. Keep the patient warm and at rest. Give nothing by mouth.
Ingestion	If accidentally swallowed obtain immediate medical attention. Keep at rest. Rinse mouth with plenty of water and drink plenty of water. Do NOT induce vomiting.

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Skin contact Remove contaminated clothing. Wash skin thoroughly with soap and water or use a proprietary skin cleaner. Do NOT use solvents or thinners. If irritation or inflammation persists, seek medical attention.

Eye contact Contact lenses should be removed. Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart, and seek medical advice.

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

Skin contact Prolonged or repeated contact with the skin or mucous membrane may result in irritant symptoms such as redness, blistering or dermatitis. Onset of symptoms may be delayed. May cause allergic skin reaction.

Eye contact Irritating to eyes.

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

Notes for the doctor None.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Use: sand, alcohol resistant foam, carbon dioxide, chemical powder, or water fog for larger fires.
Do NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products In a fire, hazardous decomposition products such as smoke, carbon monoxide and carbon dioxide may be produced.

5.3. Advice for firefighters

Protective actions during firefighting Fire will produce dense black smoke containing hazardous products of combustion. Exposure to decomposition products may be a hazard to health. Appropriate self-contained breathing apparatus may be required. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or watercourses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Exclude non-essential personnel. Keep up-wind of spill to avoid breathing vapours. Do not get on skin or in eyes.

6.2. Environmental precautions

Environmental precautions Prevent product entering drains or sewers. If the product enters drains or sewers in large quantities, the local Water Company should be contacted immediately; in the case of contamination of streams, rivers or lakes, the appropriate National regulating agency.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Contain and collect spillages with non-combustible absorbent materials e.g. sand, earth, vermiculite, diatomaceous earth and place into a suitable labelled container. Clean surfaces down with a water and detergent mixture. Do not allow spilled product or the associated washings to enter surface water drains or watercourses.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13. For information on National regulating agencies refer to Section 16.

SECTION 7: Handling and storage

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7.1. Precautions for safe handling

Usage precautions

Keep the container tightly closed when not in use. Vapours may collect in the container headspace during transit or prolonged storage. Do not breathe vapour when opening the container. Where possible open containers and mix components in a well ventilated place away from the application area. Exclude non-essential personnel. Minimise the number of employees exposed and the duration of their exposure. Do not get on skin or in eyes. Smoking, eating and drinking should be prohibited in areas of storage and use. For personal protection see Section 8. Always keep in containers made of the same material as the supply container. Good housekeeping methods and regular safe removal of waste materials should be observed. Ensure emergency equipment (for fires, spills, leaks, etc.) is readily available. FIRE/EXPLOSION This product is combustible. Exclude sources of heat, sparks and open flame. Good housekeeping standards and regular safe removal of waste materials will minimise the risks of spontaneous combustion and other fire hazards. SPECIAL Containers should be allowed to reach room temperature in a warm ventilated store inside the work place.

Advice on general occupational hygiene

Wash at the end of each work shift and before eating, smoking and using the toilet. Ensure eye wash facilities (fountain, bottle, vials, etc.) are readily available. Do not put contaminated articles or equipment e.g. spatulas, applicators, brushes, cloths etc., into pockets. Where necessary, contaminated work clothing and shoes should be removed to prevent cross contamination of surfaces and the risk of inadvertent skin contact and ingestion.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Observe the label precautions. Store between 5 °C and 30 °C unless otherwise stated in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorised access. Store separately from oxidising agents and strongly alkaline and strongly acidic materials. ENVIRONMENTAL STORAGE PRECAUTIONS Spillage, incorrect storage of chemicals or waste materials or unsuitable disposal activities can result in pollutants seeping through the soil, causing serious harm to groundwater- which is a vital source of drinking water. All wastes, especially liquid wastes, must be securely stored on site in designated areas that are isolated from surface drains and banded to contain any spillages.

7.3. Specific end use(s)

Specific end use(s)

Application by stiff bristled brush or plastic applicator provided. Mix with Solidifier component before use. Please refer to the relevant Belzona® Instructions For Use for further information.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments

No exposure limits known for ingredient(s).

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE (CAS: 1675-54-3)

DNEL

Workers - Dermal; Short term systemic effects: 8.3 mg/kg/day
 Workers - Inhalation; Short term systemic effects: 12.3 mg/m³
 Workers - Dermal; Long term systemic effects: 8.3 mg/kg/day
 Workers - Inhalation; Long term systemic effects: 12.3 mg/m³
 General population - Dermal; Short term systemic effects: 3.6 mg/kg/day
 General population - Inhalation; Short term systemic effects: 0.75 mg/m³
 General population - Oral; Short term systemic effects: 0.75 mg/kg/day
 General population - Dermal; Long term systemic effects: 3.6 mg/kg/day
 General population - Inhalation; Long term systemic effects: 0.75 mg/m³
 General population - Oral; Long term systemic effects: 0.75 mg/kg/day

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PNEC	Fresh water; 0.003 mg/l
	Sediment (Freshwater); 0.5 mg/kg
	marine water; 0.0003 mg/l
	Sediment (Marinewater); 0.5 mg/kg
	Intermittent release; 0.013 mg/l
	STP; 10 mg/l
	Sediment; 0.05 mg/kg

BISPHENOL F- EPOXY RESIN (CAS: 9003-36-5)

DNEL	Workers - Dermal; Short term local effects: 0.0083 mg/cm ²
	Workers - Dermal; Long term systemic effects: 104.15 mg/kg/day
	Workers - Inhalation; Long term systemic effects: 29.39 mg/m ³
	Consumer - Dermal; Long term systemic effects: 62.5 mg/kg/day
	Consumer - Inhalation; Long term systemic effects: 8.7 mg/m ³
	Consumer - Oral; Long term systemic effects: 6.25 mg/kg/day

PNEC	Fresh water; 0.003 mg/l
	Sediment (Freshwater); 0.294 mg/kg
	marine water; 0.0003 mg/l
	Sediment (Marinewater); 0.0294 mg/kg
	Intermittent release; 0.0254 mg/l
	STP; 10 mg/l
	Soil; 0.237 mg/kg

8.2. Exposure controls**Appropriate engineering controls**

Use in well ventilated areas or provide adequate mechanical ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Where these controls are not sufficient to maintain concentrations of particulates and/or vapours to an acceptable level, suitable respiratory protective equipment should be worn (see 'Respiratory protection' below).

Eye/face protection

It is recommended that eye protection, for example safety spectacles or goggles are worn at all times during the handling and use of this material. Eye protection should be selected in accordance with EN 166 Personal eye protection.

Hand protection

Hand protection should be selected in accordance with EN 374 Protective gloves against chemicals. The breakthrough time of the gloves selected should exceed the expected use period. Where this is not possible gloves should be changed in good time, and in any case before the breakthrough time is exceeded. If any doubt exists, advice should be sought from glove suppliers on appropriate types. Barrier creams may help to protect exposed areas of skin but are not substitutes for full physical protection. They should not be applied once exposure has occurred. **SPECIFIC RECOMMENDATIONS** Wear protective gloves made of the following material: Nitrile rubber. Medium-heavy weight gauntlet type gloves that provide wrist protection are suitable.

Other skin and body protection

STANDARD APPLICATIONS Synthetic polyethylene coveralls such as the Tyvek PRO-TECH® or equivalent coveralls manufactured to EN 13034 Type 6, Protective clothing against liquid chemicals. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner. **APPLICATION OF SMALL QUANTITIES** Cotton overalls are normally suitable.

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Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. It is essential that the concentration of the contaminant(s) in the application environment does not exceed the applicable Occupational Exposure Limit(s) (OELs) multiplied by the Assigned Protection Factor (APF) quoted for the respiratory protective equipment selected. Respiratory protection is not normally required, but the hazards of the Solidifier component should be considered for mixing and application purposes. Respiratory protection is not normally required but it may be required when this product is used in confined spaces or where adequate ventilation cannot be achieved. Where necessary, it is recommended that respiratory protective equipment that complies with EN 136 (full face mask) or EN 140 (half face mask) should be worn in combination with an organic/inorganic vapours, acid gases and ammonia cartridge (ABEK1). Where the application environment is likely to be contaminated by significant concentrations of dust then the appropriate particulate prefilter (N-, R- or, P-series) should be worn in combination with the above. It is essential that the facepiece is correctly fitted and the filter is changed in accordance with the manufacturer's instructions. In confined or poorly-ventilated spaces, a supplied-air respirator must be worn.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Viscous liquid.
Colour	Brown.
Odour	Epoxy.
Odour threshold	Not applicable.
pH	Not available.
Melting point	Not available.
Initial boiling point and range	Not available.
Flash point	>200°C/>391°F Closed cup.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not applicable.
Vapour pressure	Low.
Vapour density	> 1
Relative density	2.19 - 2.29 @ 20°C/68°F
Solubility(ies)	Immiscible with water.
Partition coefficient	Not available.
Auto-ignition temperature	>300°C/>572°F
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

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9.2. Other information

Other information

This section contains typical values for Health, Safety and Environmental guidance only and is not intended to represent a technical specification for the product.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability

Stable under recommended storage and handling conditions (see Section 7).

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions

No hazardous reactions expected when stored and handled as recommended.

10.4. Conditions to avoid

Conditions to avoid

There are no known conditions that are likely to result in a hazardous situation.

10.5. Incompatible materials

Materials to avoid

Keep away from oxidising agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

10.6. Hazardous decomposition products

Hazardous decomposition products

Does not decompose when used and stored as recommended.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀)

Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀)

Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀)

Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data

Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation

Irritating to eyes.

Respiratory sensitisation

Respiratory sensitisation

Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation

Based on the properties of the epoxy constituent(s) and considering toxicological data on similar preparations, this preparation may be a skin sensitizer. Repeated skin contact may lead to sensitisation with possibly cross-sensitisation to other epoxies.

Germ cell mutagenicity

Genotoxicity - in vitro

Based on available data the classification criteria are not met.

Genotoxicity - in vivo

Based on available data the classification criteria are not met.

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Carcinogenicity

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

IARC carcinogenicity Not listed.

NTP carcinogenicity Not listed.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

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

Route of exposure Skin and/or eye contact

Medical considerations Skin contact constitutes a pronounced hazard. Persons with a history of skin sensitisation problems should only be employed in processes in which this product is used under appropriate medical supervision.

Toxicological information on ingredients.

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE

Toxicological effects @@@Repeated skin contact may lead to sensitization with possibly cross-sensitization to other epoxies.@@@ @@@In rare cases, low molecular weight liquid epoxy resins can cause an allergic respiratory reaction like asthma, based on limited human information. The evidence available is not however, considered to fall within the classification criteria as laid out within the OSHA Hazard Communication Standard nor the Controlled Products Regulations.@@@

SECTION 12: Ecological information

Ecotoxicity There is no data on the product itself. The following information is provided on the basis of the individual component data available.

12.1. Toxicity

Toxicity Based on the epoxy resin content, this product is expected to have experimental LC50/EC50/IC50 values between 1 and 10 mg/l in most sensitive species.

Ecological information on ingredients.

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE

Toxicity Based on the epoxy resin content, this product is expected to have experimental LC50/EC50/IC50 values between 1 and 10 mg/l in most sensitive species.

12.2. Persistence and degradability

Persistence and degradability Based on the epoxy resin content, this product is not expected to be rapidly biodegradable according to OECD/EC guidelines.

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Ecological information on ingredients.

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE

Persistence and degradability

Based on the epoxy resin content, this product is not expected to be rapidly biodegradable according to OECD/EC guidelines.

12.3. Bioaccumulative potential

Bioaccumulative potential Based on the epoxy resin content, this product is expected to bioaccumulate.

Partition coefficient Not available.

Ecological information on ingredients.

BIS[4-(2,3-EPOXYPROPOXY)PHENYL]PROPANE

Bioaccumulative potential Based on the epoxy resin content, this product Log octanol/water partition coefficient (Log Kow) is expected to be greater than 4.0.

12.4. Mobility in soil

Mobility There is no data available on the product itself.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment Based on information received from our suppliers no PBT or vPvB substances are intentionally added to this product.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Controlled wastes include non-hazardous industrial and hazardous chemical wastes. All controlled wastes should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. In addition, hazardous chemical wastes should be disposed of in accordance with the Hazardous Waste Regulations. When in doubt, using information provided in this safety data sheet, advice should be obtained from the National regulating agency whether the Hazardous Waste Regulations apply. Refer to information sources listed in Section 16. COMPONENT DISPOSAL TRANSIT PACKAGING: shrink or stretch wrap, boxes and fittings that have not been contaminated with product should be re-used or recycled. UNREACTED PRODUCT and empty uncleaned containers should be disposed of as hazardous chemical waste. REACTED PRODUCT, contaminated mixing boards, spatulas, applicators, brushes, nominally empty containers and mixing bowls- once fully cured- should be disposed of as non-hazardous waste.

Waste class List of Waste (LoW) code: 08 01 11*. *Hazardous waste pursuant to Directive 91/689/EEC. The LoW code quoted in this section is a general entry. LoW codes should be assigned based on the end use of the product. Where a more specific code is available it should be used in preference to the code given above. Where in doubt refer to the List of Wastes, your local licensed waste contractor or the National regulating agency. Refer to information sources listed in Section 16.

SECTION 14: Transport information

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General Labelling and packaging requirements may vary with pack and load size. Please refer to the current transport regulations. Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of accident or spillage.

14.1. UN number

UN No. (ADR/RID) 3082

UN No. (IMDG) 3082

UN No. (ICAO) 3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) Environmentally hazardous substance, liquid, n.o.s. (containing Epoxy resin mixture)

Proper shipping name (IMDG) Environmentally hazardous substance, liquid, n.o.s. (containing Epoxy resin mixture)

Proper shipping name (ICAO) Environmentally hazardous substance, liquid, n.o.s. (containing Epoxy resin mixture)

14.3. Transport hazard class(es)

ADR/RID class 9

IMDG class 9

ICAO class/division 9

14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

Yes. Labelling requirements will vary with hazardous net quantity. Please refer to the current transport regulations.

14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not carried in bulk.

SECTION 15: Regulatory information

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

National regulations The provisions of the Health and Safety at Work Act and the Control of Substances Hazardous to Health Regulations with amendments apply to the use of this product at work. This product may add to the calculation for determining whether a site is within scope of the Control of Major Accident Hazards Regulations. Relevant EU provisions transposed through retained EU law.

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EU legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of chemicals (REACH) (as amended).
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

General information The information contained within this safety data sheet does not constitute the users own assessment of workplace risks as required by other health and safety legislation. As the specific conditions of use of the product are outside the supplier's control, the user is responsible for ensuring that the requirements of relevant National legislation are complied with. The information contained within this safety data sheet is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects of the product and should not be construed as any guarantee of technical performance or suitability for particular applications.

Key literature references and sources for data Provision and Use of Personal Protective Equipment Regulations 1992 (SI 1992: 2932). PPG18: Control of Spillages and fire fighting run-off. HSG53 The selection, use and maintenance of respiratory protective equipment, as amended. HSG97 A step by step guide to COSHH assessment. Working with ADR: An introduction to the carriage of dangerous goods by road. UK ENVIRONMENTAL REGULATING AGENCIES: England and Wales- Environment Agency; Scotland- Scottish Environment Protection Agency (SEPA); Northern Ireland- Environment and Heritage Service.

Classification procedures according to SI 2019 No. 720 Where there is no test data available for the mixture, the classification has been determined based on the individual component hazard data in accordance with EC 1272/2008.

Training advice For further information please contact your supplier, Belzona consultant or Belzona direct.

Revision comments REVISION. This safety data sheet has been revised in the following Section(s): 1, 2, 3, 7, 8, 11, 12, 15, Please observe the REVISION DATE. Should you be reading a safety data sheet that is more than 24 months old or have concerns over its validity, please contact your local Belzona consultant or Belzona direct (sds@belzona.com) and the most current information will be sent to you.

Revision date 23/08/2022

Revision 6.3

SDS number 10649

SDS status English. Approved.

Hazard statements in full H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.