



SAFETY DATA SHEET BELZONA® 7111 SOLIDIFIER

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

1.1. Product identifier

Product name	BELZONA® 7111 SOLIDIFIER
Chemical name	TRIETHYLENETETRAMINE
Product number	SN2817

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

Identified uses	A chocking or grouting material designed to endure the physical and thermal shock common to marine and industrial environments. 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 Inc. 14300 NW 60th Ave. Miami Lakes FL 33014 USA 1-305-594-4994 sds@belzona.com

1.4. Emergency telephone number

Emergency telephone	ChemTel: +1 813-248-0585
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317
Environmental hazards	Aquatic Chronic 3 - H412

2.2. Label elements

BELZONA® 7111 SOLIDIFIER**Hazard pictograms****Signal word**

Danger

Hazard statements

H302+H312 Harmful if swallowed or in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P280 Wear protective clothing, gloves, eye and face protection.
 P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P312 Call a POISON CENTRE or doctor if you feel unwell.
 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.

Contains

TRIETHYLENETETRAMINE

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**3.1. Substances**

TRIETHYLENETETRAMINE		60-100%
CAS number: 112-24-3	EC number: 203-950-6	REACH registration number: 01-2119487919-13-XXXX

Classification

Acute Tox. 4 - H302
 Acute Tox. 4 - H312
 Skin Corr. 1B - H314
 Eye Dam. 1 - H318
 Skin Sens. 1 - H317
 Aquatic Chronic 3 - H412

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

Product name

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Chemical name

TRIETHYLENETETRAMINE

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. 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

Inhalation	Exposure to vapours may result in irritation of the mucous membrane and the respiratory system; in severe cases burns may occur.
Ingestion	May cause chemical burns in mouth, oesophagus and stomach. Harmful if swallowed.
Skin contact	Skin contact causes chemical burns. Symptoms may include pain, severe local redness and tissue damage. May cause allergic skin reaction. Harmful in contact with skin.
Eye contact	Contact with eyes may cause severe irritation with corneal injury, which may result in permanent impairment of vision.

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

Specific treatments	None.
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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.
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5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Ammonia. Oxides of nitrogen. Carbon monoxide (CO). Carbon dioxide (CO ₂).
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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.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Exclude non-essential personnel. Exclude sources of ignition and ventilate the area. Keep up-wind of spill to avoid breathing vapours. Do not get on skin or in eyes.
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6.2. Environmental precautions

Environmental precautions	Prevent spills from 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.
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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.
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6.4. Reference to other sections

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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

7.1. Precautions for safe handling

Usage precautions

GENERAL 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. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). 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. The Manual Handling Operations Regulations may apply to the handling of containers/packages of this product. Refer to the guide weight on the container/package when carrying out assessments. **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. Ensure emergency equipment (for fires, spills, leaks, etc.) is readily available.

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. **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 bunded to contain any spillages.

7.3. Specific end use(s)

Specific end use(s)

Application by pouring. Mix with Base 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

When personal protective equipment, including respiratory protective equipment, is used to control exposure to hazardous substances it must be selected to meet the requirements of the COSHH Regulations. OEL's are taken from the current version of EH40 except those that are marked 'SUP' which are assigned by the supplier of the substance. Exposure to chemicals assigned occupational exposure limits (OELs) should be controlled using the most effective and reliable measures, proportional to the health risk, which minimise their escape and spread. All relevant exposure routes should be taken into account.

8.2. Exposure controls

Appropriate engineering controls

Use in well ventilated areas or provide adequate mechanical ventilation. If these are not sufficient to maintain concentrations of vapours below the relevant occupational exposure limits, 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. During subsequent machining, grinding, abrasion or removal of this product appropriate eye protection should be selected according to the type of tools or equipment used.

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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. 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.
Hygiene measures	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.
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. Respiratory protection is not normally required, but the hazards of the Base component should be considered for mixing and application purposes. 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. Where necessary, it is recommended that respiratory protective equipment that complies with EN 140 (half 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. 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 14594 (compressed airline breathing apparatus) is worn if exposure to the applicator or other people nearby cannot be controlled to below the occupational exposure limit and engineering methods cannot reasonably be improved.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Amber.
Odour	Amine.
Odour threshold	Not available.
pH	Alkaline.
Melting point	Not available.
Initial boiling point and range	277°C/531°F @ 760 mm Hg
Flash point	>115°C/239°F Closed cup.

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Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not available.
Vapour pressure	<0.01 mm Hg @ 21°C/70°F
Vapour density	> 1
Relative density	0.98 @ 25°C/77°F
Solubility(ies)	Miscible with water.
Partition coefficient	log Kow: < 0
Auto-ignition temperature	Not available.
Decomposition Temperature	Not available.
Viscosity	Not available.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

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.
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SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable under recommended storage and handling conditions (see Section 7).
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	No hazardous reactions expected when stored and handled as recommended.
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10.4. Conditions to avoid

Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
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10.5. Incompatible materials

Materials to avoid	Avoid contact with the following materials: Acids. Oxidising agents. Nitrosating agents. Copper. Aluminium. Zinc. Galvanized surfaces.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Does not decompose when used and stored as recommended.
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SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg)	1,716.0
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Species	Rat
Notes (oral LD₅₀)	Harmful if swallowed.
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	1,465.0
Species	Rat
Notes (dermal LD₅₀)	Harmful in contact with skin.
<u>Acute toxicity - inhalation</u>	
Notes (inhalation LC₅₀)	Based on available data the classification criteria are not met.
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Corrosive to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Risk of serious damage to eyes.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Based on available data the classification criteria are not met.
<u>Skin sensitisation</u>	
Skin sensitisation	Sensitising to skin.
<u>Germ cell mutagenicity</u>	
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.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met.
IARC carcinogenicity	Not listed.
NTP carcinogenicity	Not listed.
<u>Reproductive toxicity</u>	
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.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
Route of exposure	Inhalation Ingestion Skin and/or eye contact Injection.
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.

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SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hour: 570 mg/l, *Poecilia reticulata* (Guppy)
LC₅₀, 96 hour: 495 mg/l, *Pimephales promelas* (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hour: 31.1 mg/l, *Daphnia magna*

Acute toxicity - aquatic plants EC₅₀, 72 hour: 2.5 mg/l, *Desmodemus subspicatus*
EC₅₀, 72 hour: 20 mg/l, *Pseudokirchneriella subcapitata*
EC₅₀, 96 hour: 3.7 mg/l, *Pseudokirchneriella subcapitata*

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Kow: < 0

12.4. Mobility in soil

Mobility No data available.

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

General information All cleaning activities including cleaning of equipment, floors and containers, can produce large volumes of contaminated waste. All cleaning agents used are potentially polluting. Water containing detergents, degreasers or any other cleaning agents must not be allowed to enter the surface water drains or soakaways. All water based cleaning/degreasing operations should be carried out in designated areas away from the surface water system and drained to the foul water system. Where this is not possible the surface water system should be isolated by suitable damming techniques and the contaminated water collected and removed for controlled safe disposal. Where water immiscible cleaners/degreasers are used for example solvents, the relevant product safety data sheet should be referred to for information on safe disposal.

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Disposal methods	GENERAL 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 Code: 08 04 09* *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 (2000/532/EC Commission Decision), your local licensed waste contractor or the National regulating agency. Refer to information sources listed in Section 16.

SECTION 14: Transport information

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)	2259
UN No. (IMDG)	2259
UN No. (ICAO)	2259

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	Triethylenetetramine
Proper shipping name (IMDG)	Triethylenetetramine
Proper shipping name (ICAO)	Triethylenetetramine

14.3. Transport hazard class(es)

ADR/RID class	8
IMDG class	8
ICAO class/division	8

14.4. Packing group

ADR/RID packing group	II
IMDG packing group	II
ICAO packing group	II

14.5. Environmental hazards

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Environmentally hazardous substance/marine pollutant

No.

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.
EU legislation	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). 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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. In accordance with Regulation (EC) No 453/2010.

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 Regulation (EC) 1272/2008	Acute Tox. 4 - H302, Acute Tox. 4 - H312, Skin Corr. 1B - H314, Eye Dam. 1 - H318, Skin Sens. 1 - H317, Aquatic Chronic 3 - H412: On basis of test data.
Training advice	For further information please contact your supplier, Belzona consultant or Belzona direct.

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Revision comments	REVISION. This safety data sheet has been revised in the following Section(s): 8, 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	05/02/2021
Revision	7.2
SDS number	40998
SDS status	English. Approved.
Hazard statements in full	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. H412 Harmful to aquatic life with long lasting effects.