MATERIAL SAFETY DATA SHEET

BELZONA® 5811 (IMMERSION GRADE) BASE

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>BELZONA® 5811 (IMMERSION GRADE) BASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERNAL ID</td>
<td>0305/1421/-01</td>
</tr>
<tr>
<td>PRODUCT USE</td>
<td>Base component of a two component system. Mix with Solidifier component before use. High performance barrier coating for protection of metallic and non-metallic surfaces against attack from aqueous solutions. Application by brush. Application by heated airless spray. Please refer to the relevant Belzona® Instructions For Use for further information. For use only by professional operators.</td>
</tr>
<tr>
<td>SUPPLIER</td>
<td>Belzona Inc.</td>
</tr>
<tr>
<td>MANUFACTURER</td>
<td>Belzona Polymericis Limited</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>2000 N.W. 88 Court</td>
</tr>
<tr>
<td></td>
<td>Miami</td>
</tr>
<tr>
<td></td>
<td>FL 33172</td>
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<tr>
<td></td>
<td>☏ +44 (0) 1423 567 641</td>
</tr>
<tr>
<td></td>
<td>Fax: 1-305-599-1140</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:belzona@belzona.com">belzona@belzona.com</a></td>
</tr>
<tr>
<td>CONTACT PERSON</td>
<td>Prepared by the Regulatory Affairs Department; Phone: +44 (0) 1423 567 641</td>
</tr>
<tr>
<td>EMERGENCY TELEPHONE</td>
<td>CHEMTREC: 800-424-9300 Toll free in United States</td>
</tr>
<tr>
<td></td>
<td>CHEMTREC: 1-703-527-3887 For calls from outside the United States</td>
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</tbody>
</table>

2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Beige or Black Paste. Epoxy odor. WARNING. May cause allergic skin reaction. May cause irritation to eyes or skin. Possible reproductive hazard; contains a component that may cause impaired fertility. Possible developmental hazard; contains a component that may cause harm to the unborn child. Combustible liquid - Class IIIB. Prevent the product from entering into soil, drains, sewers, ditches or waterways.

INHALATION

Vapors that may collect in the container headspace during transit or prolonged storage may be harmful if inhaled. Inhalation of airborne droplets or aerosols may severely damage contacted tissue and produce scarring.

INGESTION

Ingestion is not normally an exposure risk arising from professional applications. Inadvertent ingestion of small amounts of this product through poor hygiene or cross contamination may cause irritation of mucous membranes.

SKIN CONTACT

Prolonged or repeated contact with the skin may cause irritation, blistering or dermatitis. Release during high pressure use may result in injection of material into the skin causing local necrosis.

EYE CONTACT

Splashes in the eyes may cause irritation and reversible local damage.

ROUTE OF ENTRY

Skin and/or eye contact. Ingestion. Inhalation. Injection.

TARGET ORGANS

Eyes. Skin. Respiratory system, lungs.

MEDICAL SYMPTOMS

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. Eye contact may cause tearing and discomfort.

MEDICAL CONSIDERATIONS

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

CARCINOGENICITY

Not available for the mixture, however none of the components in concentrations of 0.1% or greater are listed as carcinogens according to OSHA, NTP, ACGIH or IARC.

SENSITIZATION

There is no data on the product itself. This product contains one or more components that have caused skin sensitization in humans. See Section 11.
BELZONA® 5811 (IMMERSION GRADE) BASE

TOXIC TO REPRODUCTION
There is no data on the product itself. This product contains one or more components that have shown reprotoxic effects in laboratory tests. See Section 11.

MUTAGENICITY
Not available for the mixture, however available information on the individual components does not indicate a mutagenic hazard.

DEVELOPMENTAL TOXICITY
There is no data on the product itself. This product contains one or more components that have shown fetotoxic and/or teratogenic effects in laboratory tests. See Section 11.

3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>EC No.</th>
<th>CAS-No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)</td>
<td>500-033-5</td>
<td>25068-38-6</td>
<td>30-60%</td>
</tr>
<tr>
<td>DIISOHEPTYL PHTHALATE</td>
<td>276-158-1</td>
<td>71888-89-6</td>
<td>5-10%</td>
</tr>
<tr>
<td>SILICA, QUARTZ</td>
<td>238-878-4</td>
<td>14808-60-7</td>
<td>30-60%</td>
</tr>
</tbody>
</table>

COMPOSITION COMMENTS
The remaining constituents of this product are either considered to be non-hazardous or below the relevant concentration limits.

4 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. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.

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.

SKIN CONTACT
Remove contaminated clothing and shoes. 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. If material is injected under the skin, seek immediate medical attention. Even when there are few or no symptoms do not hesitate to refer the casualty to hospital.

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.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Use: sand, alcohol resistant foam, carbon dioxide, chemical powder, water fog for larger fires.
Do NOT use water jet.

SPECIAL FIRE FIGHTING PROCEDURES
Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate positive-pressure self-contained breathing apparatus (SCBA) and full fire fighting turn-out gear (Bunker gear) should be worn. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains, sewers, ditches or waterways.

UNUSUAL FIRE & EXPLOSION HAZARDS
SENSITIVITY TO MECHANICAL IMPACT
The product is not sensitive to mechanical impact or physical shock.
SENSITIVITY TO STATIC DISCHARGE
May accumulate static charge during use.

AUTO IGNITION TEMPERATURE (°C) N/A
FLAMMABILITY LIMIT - LOWER (%) N/A
FLAMMABILITY LIMIT - UPPER (%) N/A
FLASH POINT (°C) > 150 (302°F) CC (Closed cup).
FLAMMABILITY CLASS 3.2 Combustible Liquid IIIB

6 ACCIDENTAL RELEASE MEASURES
BELZONA® 5811 (IMMERSION GRADE) BASE

PERSONAL PRECAUTIONS
Avoid contact with eyes, skin and clothing. Refer to protective measures listed in Section 8.

ENVIRONMENTAL PRECAUTIONS
Prevent the product from entering into soil, drains, sewers, ditches or waterways in large quantities.

SPILL CLEAN UP METHODS
Scrape the majority of the product into a suitable labeled container. Cover the spill area with sand or other suitable inert material and sweep up into the container. Clean surfaces down with a water and detergent mixture. Refer to disposal methods listed in Section 13.

7 HANDLING AND STORAGE

HANDLING
GENERAL
Keep the container tightly closed until ready for use. Vapors may collect in the container headspace during transit or prolonged storage. Avoid breathing vapor when opening the container. Do not breathe spray during application. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). Avoid contact with eyes, skin and clothing. 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.

SPECIAL
When applying the product by heated airless spray, ensure that temperatures are controlled to the minimum that achieves acceptable atomization. Exclude non-essential personnel. Minimise the number of employees exposed and the duration of their exposure. Do not breathe vapors/mists. Dry sanding or brush blasting of the cured coating may give rise to hazardous dust. Wet methods should be used wherever possible. If exposure cannot be avoided see Section 8 for further exposure control measures.

STORAGE
Observe the label precautions. Store between 5°C (41°F) and 30°C (86°F) unless otherwise stated in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorized access. Store separately from oxidizing 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, should be securely stored on site in designated areas that are isolated from waterways and groundwater and diked to contain any spills.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIISOHEPTYL PHTHALATE</td>
<td>SUP</td>
<td>5 mg/m3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

INGREDIENT COMMENTS
Consult local authorities for acceptable exposure limits. Those occupational exposure limits that are marked ‘SUP’ are assigned by the supplier of the substance.

ENGINEERING MEASURES
STANDARD APPLICATIONS
Open containers in a well ventilated area.

SPRAY APPLICATIONS
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and/or vapors below the relevant occupational exposure limits, suitable respirators should be worn (see 'Respiratory Equipment' below).

RESPIRATORY EQUIPMENT
GENERAL GUIDANCE ON RESPIRATORY PROTECTION
It is essential that the concentration of the contaminant(s) in the application environment does not exceed the applicable occupational exposure limit(s) multiplied by the Assigned Protection Factor (APF) quoted for the respiratory protective equipment selected.

STANDARD APPLICATIONS
Respirators are not normally required, but may be required where adequate ventilation cannot be achieved.

SPRAY APPLICATIONS
Where necessary, it is recommended that an OSHA/NIOSH approved supplied-air respirator (SAR) equipped with a full facepiece 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.

EMERGENCY SITUATIONS
Where entry into unknown or Immediately Dangerous To Life or Health (IDLH) atmospheres is required, an OSHA/NIOSH approved pressure-demand self-contained breathing apparatus (SCBA) with a full facepiece or a pressure-demand supplied-air respirator (SAR) with a full facepiece in combination with an auxiliary pressure-demand SCBA respirator should be worn.
BELZONA® 5811 (IMMERSION GRADE) BASE

HAND PROTECTION

GENERAL GUIDANCE ON HAND PROTECTION
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. Where doubt exists, advice should be sought from manufacturers or vendors of protective gloves in order to determine appropriate types for the particular circumstances. 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
Use protective gloves made of: Neoprene. Nitrile.

STANDARD APPLICATIONS / SPRAY APPLICATIONS / EMERGENCY SITUATIONS
Medium-heavy weight gauntlet type gloves that provide wrist protection are suitable.

EYE PROTECTION

STANDARD APPLICATIONS
It is recommended that eye protection, for example safety glasses with side shields or goggles are worn at all times during the handling and use of this material.

EMERGENCY SITUATIONS
Refer to ‘Respiratory Equipment’ above.

OTHER PROTECTION

STANDARD APPLICATIONS/SPRAY APPLICATIONS
Synthetic polyethylene coveralls such as the Tyvek PRO-TECH® or equivalent coveralls manufactured to provide protection against liquid chemicals should be worn. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner.

EMERGENCY SITUATIONS
Wear chemical resistant splash suit and boots made from neoprene or PVC, as appropriate.

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.

9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Paste.
COLOR Beige. Black
ODOR Epoxy.

PHYSICAL DATA COMMENTS
This section contains typical values for Health, Safety and Environmental guidance only and is not intended to represent a technical specification for the product. L = Low. LP = See Section 12.

SOLUBILITY

BOILING POINT (°C) N/A
RELATIVE DENSITY 1.61 - 1.66 @ 20°C (68°F)
VAPOUR PRESSURE L
pH-VALUE, CONC. SOLUTION N/NA
DECOMPOSITION TEMPERATURE (°C) N/A
FLASH POINT (°C) > 150 (302°F) CC (Closed cup).
VOLATILE ORGANIC CONTENT 0 g/litre

MELTING POINT (°C) N/A
VAPOUR DENSITY (air=1) >1
EVAPORATION RATE N/NA
VISCOSITY N/A
ODOR THRESHOLD, LOWER N/A
PARTITION COEFFICIENT (N-Octanol/Water) LP

10 STABILITY AND REACTIVITY

STABILITY
Stable under recommended storage and handling conditions (see Section 7). In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide may be produced.

CONDITIONS TO AVOID
Keep away from oxidizing agents and strongly alkaline and strongly acidic materials to prevent the possibility of exothermic reaction.

11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION
There is no data on the product itself.

Name
Toxic Dose 1 - LD 50 11,400 mg/kg (oral rat)
Toxic Dose 2 - LD 50 >23,500 mg/kg (dermal rat)
Toxic Conc. - LC 50 N/NA

REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)
BELZONA® 5811 (IMMERSION GRADE) BASE

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.

Name
DIISOHEPTYL PHTHALATE

Toxic Dose 1 - LD 50
>10,000 mg/kg (oral rat)

Toxic Dose 2 - LD 50
>3,160 mg/kg (dermal rat)

Toxic Conc. - LC 50
NIA.

Toxicological information
Developmental/Reproductive toxicity studies: Has been shown to cause developmental effects at high doses in laboratory animals when administered orally by gavage in a developmental study and developmental and fertility effects when administered at high doses by feed in a two-generation reproduction study. Technologists have determined that the potential risk from occupational exposure is very low, based on the limited relevance of the rodent findings to humans and the large safety margins between exposure and effect levels.

12 ECOLOGICAL INFORMATION

ECOTOXICITY
PRODUCT COMPONENT AS SUPPLIED
There is no data on the product itself. The following information is provided on the basis of the individual component data available. The product should not be allowed to enter soil, drains, sewers, ditches and waterways or be deposited where it can affect ground or surface waters. See also Sections 5, 6, 7, 9 and 13.

CURED PRODUCT
When mixed, applied and cured in accordance with the Belzona® Instructions For Use (IFU) the resultant polymeric coating is not considered to be dangerous for the environment.

BIOACCUMULATION
Based on the individual component data, the product is expected to bioaccumulate. Log octanol/water partition coefficient (Log Pow) is expected to be greater than 3.0.

DEGRADABILITY
Based on the individual component data, the product is not expected to be readily biodegradable according to OECD/EC guidelines.

ACUTE FISH TOXICITY
Based on the individual component data, the product is expected to have experimental LC50/EC50/IC50 values between 1 and 10 mg/l in most sensitive species.

13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
GENERAL
Do NOT dump into any sewers, on the ground, or into any body of water. The product as shipped in its intended condition does not exhibit any of the ‘Characteristics’ of hazardous waste as defined in 40 CFR 261.20-24. Disposal must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations are the responsibility solely of the waste generator.

COMPONENT DISPOSAL
TRANSIT PACKAGING: shrink or stretch wrap, boxes and fittings that have not been contaminated with product should be re-used or recycled. UNREAECTED PRODUCT: empty uncleaned containers and contaminated packaging should be disposed of as non-hazardous solid waste. REACTED PRODUCT: that has been mixed and cured in accordance with the relevant ‘Instructions For Use’ will form an inert filled polymeric compound that may be able to be disposed of as non-hazardous solid waste. Refer to your local licensed, permitted waste agent or facility.

14 TRANSPORT INFORMATION

TRANSPORT NOTES
Non-regulated for transport under current Domestic, or International Air and Sea 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.

15 REGULATORY INFORMATION

SARA (311/312) HAZARD CATEGORIES
Acute Chronic
BELZONA® 5811 (IMMERSION GRADE) BASE

REGULATORY STATUS (US)
This product is considered “Hazardous” as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

U.S California Safe Drinking Water & Toxic Enforcement Act (Proposition 65): To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Toxic Substance Control Act (TSCA): All constituents of this product are included on the Inventory or are not required to be listed.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM -WHMIS

LABEL(S) FOR SUPPLY

CONTROLED PRODUCT CLASSIFICATION

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (CPR SECTION 33).
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian WHMIS Classification
D2A D2B

REGULATORY STATUS (CANADA)
Domestic Substances List (DSL) & Non-Domestic Substances List (NDSL): All constituents of this product are present on the DSL or are not required to be listed.

16 OTHER INFORMATION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

GENERAL INFORMATION
Throughout this Material Safety Data Sheet; NIA = No Information Available; N.ap = Not applicable.

REVISION COMMENTS
REVISION. This material safety data sheet has been revised in the following Section(s): 2, 8, 11.

Please observe the REVISION DATE. Should you be reading a material safety data sheet that is more than 24 months old or have concerns over its validity, please contact your local Belzona Distributor or Belzona direct (belzona@belzona.com) and the most current information will be sent to you.

REVISION DATE 10/23-2006
VERSION No. 1.1

SAFETY DATA SHEET STATUS

DISCLAIMER
To the best of our knowledge, the information contained herein is accurate. However, some of the information presented and conclusions drawn are derived from sources other than direct test data on the product itself and while Belzona Inc. believes such sources to be reliable, the information is provided without any warranty regarding its correctness.

Since Belzona Inc. has no control over the conditions under which the product will be used, liability will not be assumed to exceed replacement or refund of the purchase price of this product. Except as stated herein, there are no express or implied warranties including implied warranties of merchantability or fitness for a particular purpose. Belzona Inc. assumes no liability for injury or incidental or consequential damage arising out of the storage, handling, use or, disposal of this product.
MATERIAL SAFETY DATA SHEET
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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<td>0405/1422/01</td>
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<tr>
<td>PRODUCT USE</td>
<td>Solidifier component of a two component system. Mix with Base component before use. High performance barrier coating for protection of metallic and non-metallic surfaces against attack from aqueous solutions. Application by brush. Application by heated airless spray. Please refer to the relevant Belzona® Instructions For Use for further information. For use only by professional operators.</td>
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<td>🆖 1-305-594-4994</td>
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</tr>
<tr>
<td></td>
<td><a href="mailto:belzona@belzona.com">belzona@belzona.com</a></td>
</tr>
<tr>
<td>MANUFACTURER</td>
<td>Claro Road, Harrogate</td>
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<tr>
<td></td>
<td>North Yorkshire</td>
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<tr>
<td></td>
<td>🆖 +44 (0) 1423 567641</td>
</tr>
<tr>
<td></td>
<td>Fax: +44 (0) 1423 505967</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:belzona@belzona.co.uk">belzona@belzona.co.uk</a></td>
</tr>
<tr>
<td>CONTACT PERSON</td>
<td>Prepared by the Regulatory Affairs Department; Phone: +44 (0) 1423 567 641</td>
</tr>
<tr>
<td>EMERGENCY TELEPHONE</td>
<td>CHEMTREC: 800-424-9300 Toll free in United States</td>
</tr>
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<td></td>
<td>CHEMTREC: 1-703-527-3887 For calls from outside the United States</td>
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</tbody>
</table>

2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Dark brown. Liquid Amine odor. DANGER. Causes skin and eye burns. May be harmful if swallowed or absorbed through the skin. May cause allergic skin or respiratory reaction. A component of the product may affect the central nervous system. Combustible liquid - Class IIIB. Prevent the product from entering into soil, drains, sewers, ditches or waterways.

POTENTIAL HEALTH EFFECTS

INHALATION
Exposure to vapors may result in irritation of the mucous membrane and the respiratory system; in severe cases burns may occur. Inhalation of airborne droplets or aerosols may severely damage contacted tissue and produce scarring.

INGESTION
Ingestion is not normally an exposure risk arising from professional applications. Inadvertent ingestion of small amounts of this product through poor hygiene or cross contamination may cause irritation or burns of the mouth, throat and stomach. May be harmful if swallowed.

SKIN CONTACT
Contact with skin or any living tissue may cause burns, in severe cases complete tissue destruction may occur. This product contains components that may be absorbed through the skin (see Section 8). May be harmful if absorbed through the skin. Release during high pressure use may result in injection of material into the skin causing local necrosis.

EYE CONTACT
Contact with eyes may cause severe irritation with corneal injury, which may result in permanent impairment of vision. Product vapor in low concentrations can cause tearing, conjunctivitis and corneal edema when absorbed into the tissue of the eye from the atmosphere. Low vapor concentrations of many amines can cause a visual disturbance known as 'blue haze' or 'halo vision'. Vision becomes foggy or blurred, objects may appear blurred, and halos may be seen around lights. Symptoms may be delayed. Eye discomfort or pain may not be experienced by affected persons. The effect normally clears up within a day and causes no permanent injury. The visual disturbance could contribute to accidents.

ROUTE OF ENTRY
Inhalation. Skin absorption. Ingestion. Skin and/or eye contact. Injection.

TARGET ORGANS
Eyes. Skin. Respiratory system, lungs. Central nervous system.

MEDICAL SYMPTOMS
Inhalation of vapor, skin absorption and ingestion may result in symptoms of central nervous system depression, such as headache, drowsiness, nausea and vomiting. Inhalation may result in asthmatic symptoms, wheezing and a tightness of the chest. Extreme irritation of eyes and mucous membranes, including burning and tearing. Contact with skin or any living tissue may cause burns, in severe cases complete tissue destruction may occur. Repeated contact with the skin may cause dermatitis or allergic skin reaction. Onset of symptoms may be delayed.

MEDICAL CONSIDERATIONS
Skin contact constitutes a pronounced hazard. Persons with a history of skin sensitization problems should only be employed in processes in which this product is used under appropriate medical supervision. Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not risk exposure to respiratory sensizers.
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

CARCINOGENICITY
Not available for the mixture, however none of the components in concentrations of 0.1% or greater are listed as carcinogens according to OSHA, NTP, ACGIH or IARC.

SENSITIZATION
There is no data on the product itself. This product contains one or more components that have caused allergic either skin or respiratory reactions in susceptible individuals. See Section 11.

TOXIC TO REPRODUCTION
Not available for the mixture, however available information on the individual components does not indicate a reprotoxic hazard.

MUTAGENICITY
Not available for the mixture, however available information on the individual components does not indicate a mutagenic hazard.

DEVELOPMENTAL TOXICITY
Not available for the mixture, however available information on the individual components does not indicate a developmental hazard.

3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Name</th>
<th>EC No.</th>
<th>CAS-No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZYL ALCOHOL</td>
<td>202-859-9</td>
<td>100-51-6</td>
<td>10-30%</td>
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<tr>
<td>CYCLOALIPHATIC AMINE PREPARATION</td>
<td>Proprietary</td>
<td>Proprietary</td>
<td>10-30%</td>
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<tr>
<td>DIETHYLENETRIAMINE</td>
<td>203-950-6</td>
<td>112-24-3</td>
<td>1-5%</td>
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<tr>
<td>TRIETHYLENETETRAMINE</td>
<td>203-950-6</td>
<td>112-24-3</td>
<td>1-5%</td>
</tr>
<tr>
<td>4,4'-METHYLENEBIS(CYCLOHEXANAMINE)</td>
<td>217-168-8</td>
<td>1761-71-3</td>
<td>1-5%</td>
</tr>
</tbody>
</table>

COMPOSITION COMMENTS
The remaining constituents of this product are either considered to be non-hazardous or below the relevant concentration limits.

4 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. If breathing has stopped, administer artificial respiration. Give nothing by mouth. If unconscious, place in the recovery position and seek medical advice.

INGESTION
If accidentally swallowed do NOT induce vomiting. Keep at rest. Rinse mouth with water and drink 1 cup of water every 10 minutes for 30 minutes. Seek immediate medical attention.

SKIN CONTACT
Remove contaminated clothing and shoes. 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. If material is injected under the skin, seek immediate medical attention. Even when there are few or no symptoms do not hesitate to refer the casualty to hospital.

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.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Use: sand, alcohol resistant foam, carbon dioxide, chemical powder, water fog for larger fires.

Do NOT use water jet.

SPECIAL FIRE FIGHTING PROCEDURES
Fire will produce dense black smoke containing hazardous products of combustion (see Section 10). Exposure to decomposition products may be a hazard to health. Appropriate positive-pressure self-contained breathing apparatus (SCBA) and full fire fighting turn-out gear (Bunker gear) should be worn. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains, sewers, ditches or waterways.

UNUSUAL FIRE & EXPLOSION HAZARDS
SENSITIVITY TO MECHANICAL IMPACT
The product is not sensitive to mechanical impact or physical shock.

SENSITIVITY TO STATIC DISCHARGE
The product has a high flashpoint and contains alcohols that are good at conducting electricity. Probably not sensitive to static discharge.

AUTO IGNITION TEMPERATURE (°C) NIA
FLAMMABILITY LIMIT - LOWER(%) NIA
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

FLAMMABILITY LIMIT - UPPER(%) NIA
FLASH POINT (°C) > 103 (217°F) CC (Closed cup).
FLAMMABILITY CLASS 3.2 Combustible Liquid IIIB

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Exclude sources of ignition and ventilate the area. Exclude non-essential personnel. Keep up-wind of spill to avoid breathing vapors. Do not get in eyes, on skin, or on clothing. Refer to protective measures listed in Section 8.

ENVIRONMENTAL PRECAUTIONS
Prevent the product from entering into soil, drains, sewers, ditches or waterways in large quantities.

SPILL CLEAN UP METHODS
Contain and collect spillages with non-combustible absorbent materials e.g. sand, earth, vermiculite, diatomaceous earth and place into a suitable labeled container. Clean surfaces down with a water and detergent mixture. Refer to disposal methods listed in Section 13.

7 HANDLING AND STORAGE

HANDLING
GENERAL
Keep the container tightly closed when not in use. Vapors may collect in the container headspace during transit or prolonged storage. Avoid breathing vapor when opening the container. Where possible open containers and mix components in a well ventilated place away from the application area. Do not breathe spray during application. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). Do not get in eyes, on skin, or on clothing. 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. Ensure emergency equipment (for fires, spills, leaks, etc.) is readily available. Good housekeeping methods and regular safe removal of waste materials should be observed.

FIRE/EXPLOSION
This product is combustible. Exclude sources of heat, sparks and open flame.

SPECIAL
When applying the product by heated airless spray, ensure that temperatures are controlled to the minimum that achieves acceptable atomization. Ammonia may be given off when heated. Do not breathe vapors/mists. Exclude non-essential personnel. Minimise the number of employees exposed and the duration of their exposure.

STORAGE
Observe the label precautions. Store between 5°C (41°F) and 30°C (86°F) unless otherwise stated in a dry, well ventilated place away from sources of heat, ignition and direct sunlight. No smoking. Prevent unauthorized access. Store separately from oxidizing agents 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, should be securely stored on site in designated areas that are isolated from waterways and groundwater and diked to contain any spillages.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZYL ALCOHOL</td>
<td></td>
<td>10 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIETHYLENETRIAMINE</td>
<td></td>
<td>1 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIETHYLENETRIAMINE</td>
<td></td>
<td>1 ppm(Sk)</td>
<td>4.3 mg/m3(Sk)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRIETHYLENETETRAMINE</td>
<td></td>
<td>1 ppm(Sk)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

INGREDIENT COMMENTS

‘ACGIH’ = Threshold Limit Value (TLV) set by ACGIH. ‘OSHA (F)’ = ‘Final Rule’ Permissible Exposure Limit (PEL) set by OSHA. ‘AIHA’ = American Industrial Hygiene Association. ‘Sk’ indicates a risk of exposure through skin absorption. Consult local authorities for acceptable exposure limits. During standard, non-spray applications, the risk of exposure by inhalation to hazardous concentrations of diethylenetriamine under normal working conditions in a well ventilated area is minimal.

ENGINEERING MEASURES

STANDARD APPLICATIONS
Use in well ventilated areas or provide adequate mechanical ventilation.

SPRAY APPLICATIONS
Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and/or vapors below the relevant occupational exposure limits, suitable respirators should be worn (see ‘Respiratory Equipment’ below).
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

REVISION DATE: 08/04-2006
SDS No.: 11017

RESPIRATORY EQUIPMENT

GENERAL GUIDANCE ON RESPIRATORY PROTECTION
It is essential that the concentration of the contaminant(s) in the application environment does not exceed the applicable occupational exposure limit(s) multiplied by the Assigned Protection Factor (APF) quoted for the respiratory protective equipment selected.

STANDARD APPLICATIONS
Respirators are not normally required, but may be required where adequate ventilation cannot be achieved.

SPRAY APPLICATIONS
Where necessary, it is recommended that an OSHA/NIOSH approved supplied-air respirator (SAR) equipped with a full facepiece 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.

EMERGENCY SITUATIONS
Where entry into unknown or Immediately Dangerous To Life or Health (IDLH) atmospheres is required, an OSHA/NIOSH approved pressure-demand self-contained breathing apparatus (SCBA) with a full facepiece or a pressure-demand supplied-air respirator (SAR) with a full facepiece in combination with an auxiliary pressure-demand SCBA respirator should be worn.

HAND PROTECTION

GENERAL GUIDANCE ON HAND PROTECTION
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. Where doubt exists, advice should be sought from manufacturers or vendors of protective gloves in order to determine appropriate types for the particular circumstances. 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
Use protective gloves made of: Neoprene. Nitrile.

STANDARD APPLICATIONS / SPRAY APPLICATIONS / EMERGENCY SITUATIONS
Medium-heavy weight gauntlet type gloves that provide wrist protection are suitable.

EYE PROTECTION

STANDARD APPLICATIONS
It is recommended that eye protection, for example safety glasses with side shields or goggles are worn at all times during the handling and use of this material.

EMERGENCY SITUATIONS
Refer to ‘Respiratory Equipment’ above.

OTHER PROTECTION

STANDARD APPLICATIONS
Synthetic polyethylene coveralls such as the Tyvek PRO-TECH® or equivalent coveralls manufactured to provide protection against liquid chemicals should be worn. Grossly contaminated clothing should be removed and the skin washed with soap and water or a proprietary skin cleaner.

EMERGENCY SITUATIONS
Wear chemical resistant splash suit and boots made from neoprene or PVC, as appropriate.

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.

9 PHYSICAL AND CHEMICAL PROPERTIES

| APPEARANCE | Liquid |
| COLOR | Dark brown. |
| ODOR | Amine. |
| PHYSICAL DATA COMMENTS | This section contains typical values for Health, Safety and Environmental guidance only and is not intended to represent a technical specification for the product. A = Alkaline. LP = See Section 12. |
| SOLUBILITY | Partially miscible with water. |
| BOILING POINT (°C) | > 200 (392°F) @ 760 mm Hg |
| RELATIVE DENSITY | 1.18 - 1.22 @ 20°C (68°F) |
| VAPOUR PRESSURE | < 1.38 kPa @ 21°C (70°F) |
| pH-VALUE, CONC. SOLUTION | A |
| DECOMPOSITION TEMPERATURE (°C) | N/A |
| FLASH POINT (°C) | > 103 (217°F) CC (Closed cup). |
| VOLATILE ORGANIC CONTENT | 285 g/litre |

10 STABILITY AND REACTIVITY

STABILITY
Stable under recommended storage and handling conditions (see Section 7). In a fire, hazardous decomposition products such as smoke, carbon monoxide, carbon dioxide, oxides of nitrogen and ammonia may be produced.
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

CONDITIONS TO AVOID
Keep away from oxidizing agents and strongly acidic materials to prevent the possibility of exothermic reaction.

11 TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION
There is no data on the product itself.

Name: BENZYL ALCOHOL

<table>
<thead>
<tr>
<th>Toxic Dose 1 - LD 50</th>
<th>1230-1660 mg/kg (oral rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Dose 2 - LD 50</td>
<td>2000 mg/kg (dermal rbt)</td>
</tr>
<tr>
<td>Toxic Conc. - LC 50</td>
<td>&gt;500* mg/m3 (inh rat)</td>
</tr>
</tbody>
</table>

Toxicological information
Remarks: *Exposure duration not reported.
Exhibits a strong anesthetic effect when applied directly to the skin. May be absorbed through the skin. Developmental studies: Female rodent mice administered 750mg/kg/day over days 6-13 of gestation showed slight teratogenic effects in the offspring; slight reduced birth weight and weight gain, in the presence of significant maternal toxicity. Mutagenicity studies: In general human and animal bacterial tests have been negative (with and without activation). However, mutations were observed in Chinese hamster ovary cells (with activation).

Name: DIETHYLENEETRAMINE

<table>
<thead>
<tr>
<th>Toxic Dose 1 - LD 50</th>
<th>1080 mg/kg (oral rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Dose 2 - LD 50</td>
<td>1090 mg/kg (dermal rbt)</td>
</tr>
<tr>
<td>Toxic Conc. - LC 50</td>
<td>NIA.</td>
</tr>
</tbody>
</table>

Toxicological information
Has caused skin sensitization in humans. Occupational respiratory sensitization has been documented. May be absorbed through the skin.

Name: TRIETHYLENETETRAMINE

<table>
<thead>
<tr>
<th>Toxic Dose 1 - LD 50</th>
<th>2500 mg/kg (oral rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Dose 2 - LD 50</td>
<td>805 mg/kg (dermal rbt)</td>
</tr>
<tr>
<td>Toxic Conc. - LC 50</td>
<td>(See remarks.)</td>
</tr>
</tbody>
</table>

Toxicological information
Remarks: No deaths/4h saturated vapor.
Mutagenicity studies: positive in-vitro point mutations. However did not cause cancer in laboratory animals. Developmental studies: laboratory animals that were fed exaggerated doses of TETA showed embryotoxic and teratogenic effects in the presence of maternal toxicity that were believed to be associated with an observed copper deficiency. Has caused skin sensitization in humans.
Triethylenetetramine is closely related to ethylenediamine, which is a known respiratory sensitizer. There are a small number of case reports of occupational asthma that relate to triethylenetetramine exposure, but in most cases there was concurrent exposure to other respiratory sensitizers, in particular ethylenediamine. May be absorbed through the skin.

Name: 4,4’-METHYLENEBIS(CYCLOHEXANAMINE)

<table>
<thead>
<tr>
<th>Toxic Dose 1 - LD 50</th>
<th>625-1000 mg/kg (oral rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxic Dose 2 - LD 50</td>
<td>2110 mg/kg (dermal rbt)</td>
</tr>
<tr>
<td>Toxic Conc. - LC 50</td>
<td>NIA.</td>
</tr>
</tbody>
</table>

Toxicological information
Has caused skin sensitization in animals.

12 ECOLOGICAL INFORMATION

ECOTOXICITY
PRODUCT COMPONENT AS SUPPLIED
There is no data on the product itself. The following information is provided on the basis of the individual component data available. The product should not be allowed to enter soil, drains, sewers, ditches and waterways or be deposited where it can affect ground or surface waters. See also Sections 5, 6, 7, 9 and 13.

CURED PRODUCT
When mixed, applied and cured in accordance with the Belzona® Instructions For Use (IFU) the resultant polymeric coating is not considered to be dangerous for the environment.

BIOACCUMULATION
Based on the individual component data, the product is expected to bioaccumulate. Log octanol/water partition coefficient (Log Pow) is expected to be greater than 3.0.

DEGRADABILITY
Based on the individual component data, the product is not expected to be readily biodegradable according to OECD/EC guidelines.

ACUTE FISH TOXICITY
Based on the individual component data, the products LC50/EC50/IC50 are expected to be between 10 and 100 mg/l in most sensitive species.
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

DISPOSAL METHODS

GENERAL
Do NOT dump into any sewers, on the ground, or into any body of water. The product as shipped in its intended condition exhibits the following ‘Characteristics’ of hazardous waste as defined in 40 CFR 261.20-24: ‘Corrosivity’. RCRA Code: D002. Disposal must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characteristics are the responsibility solely of the waste generator.

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: empty uncleaned containers and contaminated packaging should be disposed of as hazardous chemical waste. REACTED PRODUCT: that has been mixed and cured in accordance with the relevant ‘Instructions For Use’ will form an inert filled polymeric compound that may be able to be disposed of as non-hazardous solid waste. Refer to your local licensed, permitted waste agent or facility.

14 TRANSPORT INFORMATION

TRANSPORT NOTES
Transport classification: labeling 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.

DOT PROPER SHIPPING NAME
Amines, liquid, corrosive, n.o.s. (containing Diethylenetriamine and Triethylenetetramine mixture)

TDG SHIPPING NAME
Amines, liquid, corrosive, n.o.s. (Diethylenetriamine)

DOT HAZARD CLASS
8

DOT PACKING GROUP
III

UN NO. SEA
2735

IMDG CLASS
8

MARINE POLLUTANT
No.

UN NO. AIR
2735

AIR CLASS
8

AIR PACK GR.
III

TDG CLASS
8

TDG PACKING GROUP
III

15 REGULATORY INFORMATION

SARA (311/312) HAZARD CATEGORIES
Acute

REGULATORY STATUS (US)
This product is considered "Hazardous" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

U.S California Safe Drinking Water & Toxic Enforcement Act (Proposition 65): To the best of our knowledge, this product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Toxic Substance Control Act (TSCA): All constituents of this product are included on the Inventory or are not required to be listed.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM -WHMIS

LABEL(S) FOR SUPPLY

![Material Causing Other Toxic Effects](image1)
![Corrosive Material](image2)

CONTROLLED PRODUCT CLASSIFICATION

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (CPR SECTION 33).
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Canadian WHMIS Classification
D2A D2B E
BELZONA® 5811 (IMMERSION GRADE) SOLIDIFIER

REGULATORY STATUS (CANADA)
Domestic Substances List (DSL) & Non-Domestic Substances List (NDSL): All constituents of this product are present on the DSL or are not required to be listed.

WHMIS Trade Secret Registry Number(s)
5017 Grant Date 5/5/2004 (Other supplier)

16 OTHER INFORMATION

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

GENERAL INFORMATION
Throughout this Material Safety Data Sheet; NIA = No Information Available; N.ap = Not applicable.

REVISION COMMENTS
REVISION. This material safety data sheet has been revised in the following Section(s): All Sections. Replaces all previous versions.

Please observe the REVISION DATE. Should you be reading a material safety data sheet that is more than 24 months old or have concerns over its validity, please contact your local Belzona Distributor or Belzona direct (belzona@belzona.com) and the most current information will be sent to you.

REVISION DATE 08/04-2006
VERSION No. 1.0

SAFETY DATA SHEET STATUS

DISCLAIMER
To the best of our knowledge, the information contained herein is accurate. However, some of the information presented and conclusions drawn are derived from sources other than direct test data on the product itself and while Belzona Inc. believes such sources to be reliable, the information is provided without any warranty regarding its correctness.

Since Belzona Inc. has no control over the conditions under which the product will be used, liability will not be assumed to exceed replacement or refund of the purchase price of this product. Except as stated herein, there are no express or implied warranties including implied warranties of merchantability or fitness for a particular purpose. Belzona Inc. assumes no liability for injury or incidental or consequential damage arising out of the storage, handling, use or, disposal of this product.