MATERIAL SAFETY DATA SHEET
BELZONA® 4151 (MAGMA-QUARTZ RESIN) BASE

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME BELZONA® 4151 (MAGMA-QUARTZ RESIN) BASE

INTERNAL ID 3201/1348/01

PRODUCT USE Base component of a two component system. Mix with Solidifier component before use. A concrete protection system for the treatment of surfaces exposed to chemical attack and abrasion. Also for grouting and bonding. Application by brush. May also be applied by spray. Please refer to the relevant Belzona® Instructions For Use for further information.

SUPPLIER
Belzona Inc.
2000 N.W. 88 Court
Miami
FL 33172
☏ 1-305-594-4994
Fax: 1-305-599-1140
sds@belzona.com

MANUFACTURER
Belzona Polymerics Limited
Claro Road, Harrogate
North Yorkshire
HG1 4DS, England
☏ +44 (0) 1423 567641
Fax: +44 (0) 1423 505967
sds@belzona.com

CONTACT PERSON Prepared by the Regulatory Affairs Department; Phone: +44 (0) 1423 567 641

EMERGENCY TELEPHONE CHEMTREC: 800-424-9300 Toll free in United States
CHEMTREC: 1-703-527-3887 For calls from outside the United States

2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Light (or pale). Straw. Liquid. Epoxy odor. WARNING. Possible risk of irreversible effects. May cause allergic skin reaction. May cause irritation to eyes or skin. Combustible liquid - Class IIIB. Prevent the product from entering into soil, drains, sewers, ditches or waterways.

POTENTIAL HEALTH EFFECTS

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 be harmful and can cause irritation of the respiratory tract.

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

May cause eye irritation.

ROUTE OF ENTRY

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

TARGET ORGANS

Skin Eyes 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: redness and irritation. Inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

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.

TOXIC TO REPRODUCTION

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

MUTAGENICITY

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

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

Name	EC No.	CAS-No.	Content %
REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)	500-033-5	25068-38-6	60-100%
2,3-EPOXYPROPYL O-TOLYL ETHER	218-645-3	2210-79-9	10-30%

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
The product is not sensitive to static discharge. May accumulate static charge during use.

AUTO IGNITION TEMPERATURE (°C)	NIA
FLAMMABILITY LIMIT - LOWER(%)	NIA
FLAMMABILITY LIMIT - UPPER(%)	NIA
FLASH POINT (°C)	CC (Closed cup). 138 (280°F)

FLAMMABILITY CLASS

3.2 Combustible Liquid IIIB

6 ACCIDENTAL RELEASE MEASURES

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

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. 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. 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

Do not breathe spray during application. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). 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 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 spillages.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT COMMENTS

Consult local authorities for acceptable exposure limits. In the absence of specific limits in OSHA, ACGIH for individual substances and where there is the possibility of exposure to particulates from sprayed products the following 8-hour Time Weighted Average (TWA 8-hrs) values should be observed:

ACGIH; respirable particulates 3mg/m³; total inhalable particulates 10mg/m³
OSHA; respirable particulates 5mg/m³; total inhalable particulates 15mg/m³

ENGINEERING MEASURES

STANDARD APPLICATIONS

Open containers in a well ventilated area.

SPRAY APPLICATIONS

Where reasonably practicable adequate ventilation 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. Where necessary, it is recommended that an OSHA/NIOSH approved air-purifying full facepiece or half-face respirator equipped with appropriate vapor cartridge(s) should be worn. 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.

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.

APPLICATION OF SMALL QUANTITIES

Light weight disposable gloves are normally 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.

APPLICATION OF SMALL QUANTITIES

Cotton overalls are normally suitable.

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. Do not put contaminated articles or equipment e.g. spatulas, applicators, brushes, cloths etc., into pockets. Ensure eye wash facilities (fountain, bottle, vials, etc.) are readily available. 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	Light (or pale). Straw.
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. LP = See Section 12.
SOLUBILITY	Immiscible with water
BOILING POINT (°C)	>200 (392°F) 760 mm Hg
MELTING POINT (°C)	NIA
RELATIVE DENSITY	1.13 - 1.15 @ 20°C (68°F)
VAPOR DENSITY (air=1)	>1

VAPOR PRESSURE	0.001 kPa @ 20°C (68°F)
EVAPORATION RATE	N.ap
pH-VALUE, CONC. SOLUTION	N.ap
VISCOSITY	NIA
DECOMPOSITION TEMPERATURE (°C)	>200 (392°F)
ODOR THRESHOLD, LOWER	NIA
FLASH POINT (°C)	138 (280°F) CC (Closed cup).
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

Name	REACTION PRODUCT: BISPHENOL A-(EPICHLORHYDRIN)
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.ap

Toxicological information

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	2,3-EPOXYPROPYL O-TOLYL ETHER
Toxic Dose 1 - LD 50	4,000 mg/kg (oral rat)
Toxic Dose 2 - LD 50	NIF
Toxic Conc. - LC 50	6,090 mg/m3/4h (inh rat)

Toxicological information

Developmental studies: In a dominant-lethal assay 2,3-epoxypropyl o-tolyl ether was administered dermally to mice at doses of 1500mg/kg body weight, three times a week for 8 consecutive weeks. A significant decrease in the mean number of implants was recorded suggesting pre-implantation loss; however there was no increase in post-implantation loss. This result was interpreted to show general toxic effects in the dams rather than a genotoxic effect causing the interruption of the normal early development. Mutagenicity studies: A study with transgenic Muta™Mice with 2,3-epoxypropyl o-tolyl ether showed that the compound has no detectable mutagenic potential in-vivo, although significant in-vitro mutagenicity has been observed in bacterial and mammalian cell culture tests. Has caused skin sensitization in animals.

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. 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.

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 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. UNREACTED 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

REGULATORY STATUS (US)

This product is considered "Hazardous" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

SECTION 313: This product contains 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



Materials Causing Other
Toxic Effects.

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

D2B

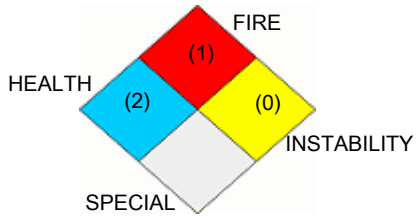
REGULATORY STATUS (CANADA)

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

BELZONA® 4151 (MAGMA-QUARTZ RESIN) BASE

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): 16, 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 (sds@belzona.com) and the most current information will be sent to you.

REVISION DATE 10/04-2011

VERSION No. 1.2

SAFETY DATA SHEET STATUS

English (North American). Approved.

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® 4151 (MAGMA-QUARTZ RESIN) SOLIDIFIER

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

PRODUCT NAME BELZONA® 4151 (MAGMA-QUARTZ RESIN) SOLIDIFIER

INTERNAL ID 3301/1349/01

PRODUCT USE Solidifier component of a two component system. Mix with Base component before use. A concrete protection system for the treatment of surfaces exposed to chemical attack and abrasion. Also for grouting and bonding. Application by brush. May also be applied by spray. Please refer to the relevant Belzona® Instructions For Use for further information.

SUPPLIER
Belzona Inc.
2000 N.W. 88 Court
Miami
FL 33172
☏ 1-305-594-4994
Fax: 1-305-599-1140
sds@belzona.com

MANUFACTURER
Belzona Polymerics Limited
Claro Road, Harrogate
North Yorkshire
HG1 4DS, England
☏ +44 (0) 1423 567641
Fax: +44 (0) 1423 505967
sds@belzona.com

CONTACT PERSON Prepared by the Regulatory Affairs Department; Phone: +44 (0) 1423 567 641

EMERGENCY TELEPHONE CHEMTREC: 800-424-9300 Toll free in United States
CHEMTREC: 1-703-527-3887 For calls from outside the United States

2 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Amber. Liquid. Amine odor. DANGER. Causes skin and eye burns. May cause allergic skin reaction. May be harmful if swallowed. Risk of serious damage to lungs if inhaled. May cause skin depigmentation (occupational vitiligo). May cause respiratory tract irritation. 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. A component of the product may affect the liver and kidneys. 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. Risk of serious damage to lungs if inhaled.

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. One or more components of this product have been shown to cause skin depigmentation (occupational vitiligo). This product contains components that may be absorbed through the skin (see Section 8). 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 bluish, 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 Liver Kidneys Respiratory system, lungs

MEDICAL SYMPTOMS

Skin contact may cause: Chemical burns. Repeated contact with the skin may cause dermatitis or allergic skin reaction. Onset of symptoms may be delayed. May cause skin depigmentation (occupational vitiligo). Extreme irritation of eyes and mucous membranes, including burning and tearing. Exposure to vapors may result in irritation of the mucous membrane and the respiratory system; in severe cases burns may occur. May cause nose, throat, and lung irritation.

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.

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. Possible risk of impaired fertility. 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. May cause harm to the unborn child. See Section 11.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Name	EC No.	CAS-No.	Content %
PARATERTIARYBUTYLPHENOL	202-679-0	98-54-4	30-60%
1,3-BENZENEDIMETHANAMINE	216-032-5	1477-55-0	10-30%
TRIMETHYLHEXANE-1,6-DIAMINE	247-134-8	25620-58-0	10-30%
PARAISONONYLPHENOL	246-672-0	25154-52-3	5-10%

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

May accumulate static charge during use. Probably not sensitive to static discharge.

AUTO IGNITION TEMPERATURE (°C)	NIA
FLAMMABILITY LIMIT - LOWER(%)	NIA
FLAMMABILITY LIMIT - UPPER(%)	NIA
FLASH POINT (°C)	>94 (201°F) CC (Closed cup).

FLAMMABILITY CLASS

3.2 Combustible Liquid IIIB

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Exclude non-essential personnel. Keep up-wind of spill to avoid breathing vapors. 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

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. 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. Ensure emergency equipment (for fires, spills, leaks, etc.) is readily available. Always keep in containers made of the same material as the supply container.

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

Do not breathe spray during application. Prevent air-borne concentrations higher than the occupational exposure limits (see Section 8). 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

COMPONENT	STD	TWA (8-hrs)		STEL (15 min)		Notes
1,3-BENZENEDIMETHANAMINE	ACGIH				0.1 mg/m3 (Sk,CL)	

ACGIH=American Conference of Governmental Industrial Hygienists.

INGREDIENT COMMENTS

Consult local authorities for acceptable exposure limits. 'ACGIH' = Threshold Limit Value (TLV) set by ACGIH. 'Sk' indicates a risk of exposure through skin absorption. 'CL' = Ceiling limit; the concentration that should not be exceeded during any part of the working exposure.

ENGINEERING MEASURES

STANDARD APPLICATIONS

Use in well ventilated areas or provide adequate mechanical ventilation.

SPRAY APPLICATIONS

Where reasonably practicable adequate ventilation 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. Where necessary, it is recommended that an OSHA/NIOSH approved air-purifying full facepiece respirator equipped with appropriate vapor/particulate cartridge(s) should be worn. 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.

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.

APPLICATION OF SMALL QUANTITIES

Light weight disposable gloves are normally 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.

APPLICATION OF SMALL QUANTITIES

Cotton overalls are normally suitable.

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. Do not put contaminated articles or equipment e.g. spatulas, applicators, brushes, cloths etc., into pockets. Ensure eye wash facilities (fountain, bottle, vials, etc.) are readily available. 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	Amber.
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	Immiscible with water
BOILING POINT (°C)	230 (446°F) 760 mm Hg
MELTING POINT (°C)	NIA
RELATIVE DENSITY	0.99 - 1.03 @ 20°C (68°F)
VAPOR DENSITY (air=1)	>1
VAPOR PRESSURE	<1.38 kPa @ 21°C (70°F)
EVAPORATION RATE	N.ap
pH-VALUE, CONC. SOLUTION	A
VISCOSITY	NIA
DECOMPOSITION TEMPERATURE (°C)	NIA
ODOR THRESHOLD, LOWER	NIA
FLASH POINT (°C)	>94 (201°F) CC (Closed cup).
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, oxides of nitrogen and ammonia may be produced.

CONDITIONS TO AVOID

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

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50	>1700 mg/kg (oral rat)
TOXIC DOSE 2 - LD 50	>2000 mg/kg (dermal rbt)*
TOXIC CONC. - LC 50	NIA

TOXICOLOGICAL INFORMATION

Remarks: *Estimated. May cause sensitization by skin contact. May cause skin depigmentation (occupational vitiligo). Laboratory tests in rats have shown that paraisononylphenol causes estrogenic activity in both in-vitro and in-vivo assays. In one multi-generation study, minor disturbances in the reproductive system of offspring were noted. The oral NOAEL for paraisononylphenol for reproductive effects is 15mg/kg/day. Laboratory tests in rats have shown that acute exposure to an aerosol of 1, 3-benzenedimethanamine caused adverse effects principally in the lungs, however changes in liver and kidneys were also noted.

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. 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.

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 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 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. 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 1, 3-Benzenedimethanamine and Alkylphenol mixture)
ROAD TRANSPORT NOTES	ORM-D
TDG SHIPPING NAME	Amines, liquid, corrosive, n.o.s. (1, 3-Benzenedimethanamine)
DOT HAZARD CLASS	8
DOT PACKING GROUP	II
UN NO. SEA	2735
IMDG CLASS	8
IMDG PACK GR.	II
MARINE POLLUTANT	Yes.
UN NO. AIR	2735
AIR CLASS	8
AIR PACK GR.	II
TDG CLASS	8
TDG PACKING GROUP	II

15 REGULATORY INFORMATION

SARA (311/312) HAZARD CATEGORIES

Acute Chronic

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



Materials Causing Other Toxic Effects.



Corrosive Material.

BELZONA® 4151 (MAGMA-QUARTZ RESIN) SOLIDIFIER

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.

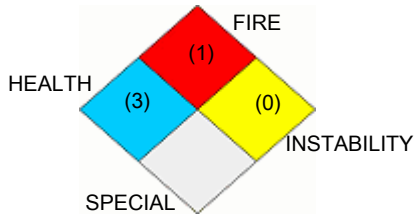
Canadian WHMIS Classification
D2A D2B E

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): 16, 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 (sds@belzona.com) and the most current information will be sent to you.

REVISION DATE 10/04-2011

VERSION No. 1.3

SAFETY DATA SHEET STATUS

English (North American). Approved.

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.