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

SECTION 1: IDENTIFICATION			
Product identifier used on the label:	Belzona® 4151 (Magma-Quartz Resin) Base		
Other means of identification:	Internal ID: SN2735		
Recommended use of the chemical and restrictions on 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 (IFU) for further information. Product should be used by professional operators.		
Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:	Belzona Inc. 2000 NW 88th Ct. Miami, FL 33172 U.S.A. Tel: 1-305-594-4994 Fax: 1-305-599-1140 Website: www.belzona.com	Belzona Polymerics Ltd. Claro Road, Harrogate, HG1 4DS, UK Tel: +44 (0) 1423 567641 Fax: +44 (0) 1423 505967 Website: www.belzona.com	Belzona Canada Inc. 563 Edward Avenue Unit 2, Richmond Hill, Ontario L4C 9W7 Tel: 1-905-737-2225 Fax: 1-905-737-1597 Website: www.belzona.com
Emergency telephone number:	CHEMTREC: 1-800-424-9300 Toll free in United States CHEMTREC: 1-703-527-3887 For calls from outside the United States		

SECTION 2: HAZARDS IDENTIFICATION	
Classification of the chemical:	Skin corrosion / irritation - Category 2 Eye damage / irritation - Category 2B Skin sensitization - Category 1 Germ cell mutagenicity - Category 2
Signal word:	Warning
Hazard statements:	Causes skin irritation. Causes eye irritation. May cause an allergic skin reaction. Suspected of causing genetic defects.
Symbols:	
Precautionary statements:	**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves / protective clothing / eye protection / face protection. Avoid breathing fume / mist / vapors / spray. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
	Response If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice / attention. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice / attention. If exposed or concerned: Get medical advice / attention.
	Storage Store locked up.
	Disposal Dispose of contents / container in accordance with all Federal, State / Provincial and local regulations.
Hazards not otherwise classified that have been identified during the classification process:	No applicable information is available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS				
Chemical name	Common names and synonyms	CAS number	EC number	Weight %
Reaction product: bisphenol A-(epichlorhydrin) epoxy resin	Not available	25068-38-6	500-033-5	60-100
[(Tolyloxy)methyl]oxirane	Cresyl glycidyl ether	26447-14-3	247-711-4	10-30

SECTION 4: FIRST-AID MEASURES	
Description of necessary measures, subdivided according to the different routes of exposure:	**General information:** In all cases of doubt, or if symptoms persist, seek medical attention. Never administer anything by mouth to an unconscious individual.
	Inhalation: Remove victim to fresh air and keep comfortable for breathing. If victim is not breathing, provide artificial respiration. Seek medical attention if adverse effects persist or escalate to severe. If victim is unconscious, place in recovery position and seek medical attention immediately.
	Ingestion: If accidentally swallowed, rinse mouth with water and obtain immediate medical attention. Remove dentures, if applicable. Keep at rest. Do NOT induce vomiting.
	Skin contact: Remove and isolate contaminated clothing and shoes. To remove product material from skin, rinse thoroughly with soap and water. Do NOT use solvents or thinners. If skin irritation or rash occurs, seek medical attention. Wash contaminated clothing before reuse. If injected under the skin, seek immediate medical attention.
	Eye contact: Immediately flush eyes with plenty of water while holding the eyelids apart. Check for and remove any contact lenses if easy to do. Continue to rinse for at least 15 minutes. Seek medical attention.
Most important symptoms / effects, acute and delayed:	**Inhalation:** Inhalation of vapors, airborne droplets or aerosols may be harmful and cause irritation to the respiratory tract.
	Ingestion: Inadvertent ingestion of small amounts may cause irritation to mucous membranes. Swallowing large amount may cause injury to the gastrointestinal system. Symptoms include gastrointestinal irritation, burns and ulceration.
	Skin contact: Contact with skin may cause skin irritation with local redness. Prolonged or repeated contact may cause skin burns. Symptoms may include irritation, severe local redness, pain, swelling and tissue damage. May also cause allergic skin reaction. Release during high pressure use may result in injection of material into the skin and cause local necrosis.
	Eye contact: May cause eye irritation.
Indication of immediate medical attention and special treatment needed, if necessary:	No applicable information is available.

SECTION 5: FIRE-FIGHTING MEASURES	
Suitable (and unsuitable) extinguishing media:	Use: dry sand, alcohol-resistant foam, carbon dioxide, dry chemical, water fog for larger fires. Do NOT use water jet.
Specific hazards arising from the chemical:	Fire will produce dense black smoke, which may contain hazardous combustion products such as phenolics, carbon monoxide and carbon dioxide.
Sensitivity to mechanical impact:	This product is not sensitive to mechanical impact or physical shock.
Sensitivity to static discharge:	This product is not sensitive to static discharge. May accumulate static charge during use.
Special protective equipment and precautions for fire-fighters:	Firefighters should wear appropriate protective equipment. Positive pressure self-contained breathing apparatus (SCBA) should be worn. Cool fully closed containers exposed to fire with water spray. Do not allow run-off from firefighting to enter drains, sewers, ditches, or waterways. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES	
Personal precautions, protective equipment and emergency procedures:	Stop leak, if without risk. No action should be taken involving any personal risk or without suitable training. Evacuate personnel to a safe area. Eliminate all ignition sources and ventilate the area. Avoid breathing fume, mist, vapors or spray. Avoid contact with eyes, skin and clothing. Refer to protective measures listed in Section 8.
Methods and material for containment and cleaning up:	Contain and collect spillage with inert 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.

SECTION 7: HANDLING AND STORAGE	
Precautions for safe handling:	**General:** Exclude non-essential personnel. Put on appropriate protective equipment (see Section 8). Avoid contact with eyes, skin and clothing. Avoid breathing fume, mist, vapors or spray. All eating, drinking, and smoking should be prohibited in areas where this material is handled, stored and processed. After handling, workers should wash hands and face before eating, drinking and smoking. Use product in well ventilated areas. Use respiratory protection when ventilation is inadequate. Keep product in its original container or use an approved alternative made from compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities:	Store in accordance with local regulations. Observe the label precautions. Prevent unauthorized access. Store between 5°C (41°F) and 30°C (86°F) unless otherwise stated in a dry, well-ventilated area away from sources of heat, ignition and direct sunlight. Store product away from oxidizing agents, acidic and alkaline materials. Use appropriate containment to avoid environmental contamination. Assure appropriate fire extinguishers are available in close proximity to the storage area.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION	
Exposure limit values:	Consult local authorities for acceptable exposure limits. In the absence of specific limits in OSHA and ACGIH for individual substances and where there is the possibility of exposure to particulates from sprayed products the following TWA values should be observed: ACGIH: respirable particulates, 3 mg/m^3, total inhalable particles: 10 mg/m^3 OSHA: respirable particulates, 5 mg/m^3, total inhalable particles: 15 mg/m^3
Appropriate engineering controls:	Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker's exposure to airborne contaminants below recommended or statutory limits. If concentrations of particulates and / or vapors are above the relevant occupational exposure limits, suitable respirators should be worn (see "respiratory protection" below).
Individual protection measures:	**Respiratory protection:** When adequate ventilation cannot be achieved, a NIOSH approved air-purifying full facepiece or half-face respirator equipped with appropriate vapor / particulate cartridge(s) is recommended. If the application environment presents the likelihood of contaminants by significant concentrations of dust, the appropriate particulate pre-filter (N-, R-, or P-series) should be worn in combination with the above. It is essential that the facepiece is fitted correctly and that the filter is changed in accordance with the manufacturer's instructions. For spray applications, it is recommended that an NIOSH approved supplied-air respirator (SAR) equipped with a full facepiece is worn when necessary. Where entry into unknown or Immediately Dangerous To Life or Health (IDLH) atmospheres is required, a NIOSH approved full facepiece pressure demand self-contained breathing apparatus (SCBA), or a combination of full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply should be worn. Respirator selection must be based on known or anticipated exposure levels, the hazards of the products and the safe working limits of the selected respirator.
	Hand protection: Chemical-resistant, impervious gloves, complying with an approved standard, should be worn at all times when handling this product, especially when the risk assessment indicates the necessity. Pay close attention to the permeability and breakthrough time of the gloves and change gloves before the breakthrough time is exceeded. If in doubt, seek advice from manufacturers or vendors of the protective gloves in order to determine appropriate types for the particular circumstances.
	Eye protection: It is recommended that eye protection (eg. safety glasses with side shields, goggles, full face shield) is worn at all times during the handling and use of this material, especially when the risk assessment indicates the necessity.
	Other protections: Protective clothing, footwear, and any additional skin protection should be identified and selected based on the task being performed and the risks involved. Protective garments should be approved by a specialist before handling this product.
	Hygiene measures: Wash hands and face thoroughly at the end of each work shift and before eating, smoking and / or using the lavatory. Do not place contaminated articles or equipment into pockets. Ensure eye wash stations and safety showers are readily available. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Light amber liquid
Odor:	Epoxy
Odor threshold:	Not available
pH:	Not applicable
Melting point / freezing point:	May solidify < -15 °C (5°F)
Boiling point / boiling range:	Decomposes
Flash point:	121°C (250°F) Method: closed cup
Evaporation rate:	Not available
Flammability:	Not flammable
Upper / lower flammability or explosive limits:	Not available
Vapor pressure:	Not available
Vapor density (Air =1):	Not available
Relative density:	1.16 at 25 °C (77°F)
Solubility in water:	<= 1% at 25 °C (77°F)
Partition coefficient n-octanol / water:	Not available
Autoignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic:	5-7 poise at 25 °C (77°F)

SECTION 10: STABILITY AND REACTIVITY	
Reactivity:	No vigorous reaction known under recommended storage and handling conditions (see Section 7).
Chemical stability:	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions:	Under recommended storage and handling conditions, hazardous reactions will not occur.
Conditions to avoid:	No known specific condition to avoid if stored and used as recommended.
Incompatible materials:	Oxidizing agents, acid and base including amines.
Hazardous decomposition products:	No known hazardous decomposition products if stored and used as recommended.

SECTION 11: TOXICOLOGICAL INFORMATION	
Likely routes of exposure:	Inhalation, ingestion, skin contact, injection, and eye contact.

Symptoms related to the physical, chemical and toxicological characteristics:	See Section 4: “Most important symptoms/effects, acute and delayed”.
Delayed and immediate effects and also chronic effects from short and long-term exposure:	**Acute toxicity:** See toxicity data below. For most important symptoms/effects, see Section 4.
	Skin corrosion / irritation: May cause skin irritation. For most important symptoms/effects, see Section 4.
	Eye damage / irritation: May cause eye irritation.
	Respiratory and skin sensitization: Skin contact may cause an allergic skin reaction. For reaction product: bisphenol A-(epichlorhydrin) epoxy resin, 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.
	Germ cell mutagenicity: There is no data on the product itself. For [(tolyloxy)methyl]oxirane, significant in vitro mutagenicity has been observed in bacterial and mammalian cell cultures. In animal genetic toxicity studies there are both positive and negative cases.
	Carcinogenicity: There is no data on the product itself. None of the components in concentration of 0.1% or greater are listed as carcinogens according to OSHA, NTP, or IARC.
	Reproductive / developmental toxicity: There is no data on the product itself. Available information on the individual components does not indicate reproductive or developmental toxicity.
	Specific target organ toxicity - single exposure: There is no data available.
	Specific target organ toxicity - repeated exposure: There is no data available.
	Aspiration hazard: Based on physical properties, not likely to be an aspiration hazard.
Name of toxicologically synergistic products:	There is no data available.
Numerical measures of toxicity:	There is no data on the product itself. **Acute toxicity:** Oral: Component: reaction product: bisphenol A-(epichlorhydrin) epoxy resin LD50 > 11,400 mg/kg, species: rat Component: [(tolyloxy)methyl]oxirane LD50 > 4,000 mg/kg, species : rat Dermal: Component: reaction product: bisphenol A-(epichlorhydrin) epoxy resin LD50 > 23,500 mg/kg, species: rat Component: [(tolyloxy)methyl]oxirane LD50 > 2,000 mg/kg, species : rabbit Inhalation: Component: [(tolyloxy)methyl]oxirane LC_{50} (4h): 6,090 mg/m^3, species : rat

SECTION 12: ECOLOGICAL INFORMATION	
Ecotoxicity:	**Aquatic toxicity:** There is no data on the product itself. Based on the individual component data, the product is expected to have experimental LC_{50} / EC_{50} / ErC_{50} values between 1 and 10 mg/L in most sensitive species.
Persistence and degradability:	There is no data available on the product itself. Based on the individual component data, this product is not expected to be readily biodegradable.
Bioaccumulative potential:	There is no data available on the product itself. Based on the individual component data, this product is expected to bioaccumulate.
Mobility in soil:	There is no data available on the product itself. Component: reaction product: bisphenol A-(epichlorhydrin) epoxy resin Potential for mobility in soil is low (K_{oc} between 500 and 2000). Component: [(tolyloxy)methyl]oxirane Potential for mobility in soil is high (K_{oc} between 50 and 150).
Other adverse effects:	No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS	
Disposal methods:	Generation of waste should be avoided or minimized, if possible. Do NOT dump into any sewers, on the ground, or into any body of water. This product as shipped in its intended condition doesn’t meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261. 20-24). 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. Disposal must be in compliance with all Federal, State / Provincial and local laws and regulations. Regulations may vary in different locations. It is the generator’s responsibility to determine the toxicity and physical properties of the

	material generated, and further to determine the proper waste classification and disposal methods.

SECTION 14: TRANSPORT INFORMATION	
US Department of Transportation (DOT):	Not regulated.
Canada Transportation of Dangerous Goods (TDG):	Not regulated.
International Air Transport Association (IATA):	UN number: UN3082 Proper shipping name: Environmentally hazardous substance, liquid, N.O.S. (containing epoxy resin) Transport hazard class: 9 Packing Group: III. Environmental hazards: environmentally hazardous substance.
International Maritime Dangerous Goods (IMDG):	UN number: UN3082 Proper shipping name: Environmentally hazardous substance, liquid, N.O.S. (containing epoxy resin) Transport hazard class: 9 Packing Group: III. Environmental hazards: marine pollutant.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC code):	Not carried in bulk.
Special precautions:	No applicable information is available.
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.

SECTION 15: REGULATORY INFORMATION	
OSHA Hazard Communication Standard:	This product is considered “Hazardous” as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA chemical substance inventory:	All constituents of this product are included on the inventory or are not required to be listed.
SARA 302 extremely hazardous substance:	Not listed.
SARA 311/312 hazards:	Acute and chronic health hazard.
SARA 313 toxic chemicals:	Not listed.
California Proposition 65:	Not listed.
Canada WHMIS classification:	D2B. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.
Canada WHMIS label:	
DSL and NDSL:	All constituents of this product are present on the DSL or are not required to be listed. [(Tolyloxy)methyl]oxirane is subject to Significant New Activity (SNAc) notices.

SECTION 16: OTHER INFORMATION	
Abbreviations:	ACGIH = American Conference of Government Industrial Hygienists CAS = Chemical Abstracts Service DSL = Domestic Substances list EPA = Environmental Protection Agency IARC = International Agency for Research on Cancer NDSL = Non-domestic Substances List NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = Occupational Safety and Health Administration RCRA = Resource Conservation and Recovery Act SARA = Superfund Amendment And Reauthorization Act TSCA = Toxic Substance Control Act TWA = Time-weighted Average UN = United Nations WHMIS = Workplace Hazardous Materials Information System
Safety data sheet prepared by:	Safety, Health and Environmental (S.H.E.) Department
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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 believes such sources to be reliable, the information is provided without any warranty regarding its correctness.

Since Belzona 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 of merchantability or fitness for a particular purpose. Belzona assumes no liability for injury or incidental or consequential damage arising out of the storage, handling, use or, disposal of this product.

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

SECTION 1: IDENTIFICATION			
Product identifier used on the label:	Belzona® 4151 (Magma-Quartz Resin) Solidifier		
Other means of identification:	Internal ID: SN2736		
Recommended use of the chemical and restrictions on 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 (IFU) for further information. Product should be used by professional operators.		
Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:	Belzona Inc. 2000 NW 88th Ct. Miami, FL 33172 U.S.A. Tel: 1-305-594-4994 Fax: 1-305-599-1140 Website: www.belzona.com	Belzona Polymerics Ltd. Claro Road, Harrogate, HG1 4DS, UK Tel: +44 (0) 1423 567641 Fax: +44 (0) 1423 505967 Website: www.belzona.com	Belzona Canada Inc. 563 Edward Avenue Unit 2, Richmond Hill, Ontario L4C 9W7 Tel: 1-905-737-2225 Fax: 1-905-737-1597 Website: www.belzona.com
Emergency telephone number:	CHEMTREC: 1-800-424-9300 Toll free in United States CHEMTREC: 1-703-527-3887 For calls from outside the United States		

SECTION 2: HAZARDS IDENTIFICATION	
Classification of the chemical:	Acute toxicity (oral) - Category 4 Acute toxicity (Inhalation) - Category 4 Skin corrosion / irritation- Category 1B Eye damage / irritation - Category 1 Skin sensitization - Category 1 Reproductive toxicity – Category 2 Specific target organ toxicity: single exposure (respiratory tract irritation) - Category 3
Signal word:	Danger
Hazard statements:	Harmful if swallowed. Harmful if inhaled. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child. May cause respiratory irritation.
Symbols:	
Precautionary statements:	**Prevention** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use only outdoors or in a well-ventilated area. Wear protective gloves / protective clothing / eye protection / face protection. Avoid breathing fume / mist / vapors / spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.
	Response If swallowed: Rinse mouth. Do NOT induce vomiting. Call a poison center / doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Wash skin with plenty of water / shower. If skin irritation or rash occurs: Get medical advice / attention. Wash contaminated clothing before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center / doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center / doctor. If exposed or concerned: Get medical advice / attention.
	Storage Store locked up.
	Disposal Dispose of contents / container in accordance with all Federal, State / Provincial and local regulations.
Hazards not otherwise classified that have been identified during the	Product may cause central nervous system effects. Risk of serious damage to lungs if inhaled.

classification process:	A component of the product may affect the liver and kidneys.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS				
Chemical name	Common names and synonyms	CAS number	EC number	Weight %
Paratertiarybutylphenol	4-*tert*-butylphenol	98-54-4	202-679-0	30-60
Trimethylhexamethylenediamine	Not available	25620-58-0	247-134-8	15-40
1, 3-Benzenedimethanamine	m-xylene-α,α'-diamine	1477-55-0	216-032-5	10-30
4-Nonylphenol, branched	Nonyl phenol	84852-15-3	284-325-5	1-5

SECTION 4: FIRST-AID MEASURES	
Description of necessary measures, subdivided according to the different routes of exposure:	**General information:** In all cases of doubt, or if symptoms persist, seek medical attention. Never administer anything by mouth to an unconscious individual.
	Inhalation: Remove victim to fresh air and keep comfortable for breathing. Obtain immediate medical attention. If victim is not breathing, provide artificial respiration. If victim is unconscious, place in recovery position.
	Ingestion: If accidentally swallowed, rinse mouth with water and obtain immediate medical attention. Remove dentures, if applicable. Keep at rest. Do NOT induce vomiting.
	Skin contact: Remove and isolate contaminated clothing and shoes. To remove product material from skin, rinse thoroughly with soap and water. Do NOT use solvents or thinners. Get medical advice / attention. Wash contaminated clothing before reuse. If injected under the skin, seek immediate medical attention.
	Eye contact: Immediately flush eyes with plenty of water while holding the eyelids apart. Check for and remove any contact lenses if easy to do. Continue to rinse for at least 15 minutes. Seek medical attention immediately.
Most important symptoms / effects, acute and delayed:	**Inhalation:** Exposure to vapors may cause irritation and burns to the mucous membrane and the respiratory system. Inhalation of airborne droplets or aerosols may severely damage contacted skin and produce scarring. Risk of serious damage to the lungs if inhaled. Severe case of overexposure can result in respiratory failure. May cause central nervous system effects, such as dizziness, headache, nausea, confusion, and breathing difficulties. Harmful if inhaled.
	Ingestion: Ingestion may cause irritation or burns to the mouth, throat and stomach. Risk of perforation of the esophagus and the stomach. Harmful if swallowed.
	Skin contact: Contact with skin may cause skin burns and depigmentation, in severe cases complete tissue destruction. Absorption through the skin may cause dizziness, headache, nausea, confusion, and breathing difficulties. May also cause allergic skin reaction. Release during high pressure use may result in injection of material into the skin and cause local necrosis.
	Eye contact: May cause eye burns with corneal injury, and result in permanent impairment of vision or even blindness. Low concentration of vapor may cause tearing, conjunctivitis and corneal edema when absorbed into the eye tissue from the atmosphere. Exposed individual may experience 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. This effect is normally temporary and causes no permanent injury. This visual disturbance could contribute to accidents.
Indication of immediate medical attention and special treatment needed, if necessary:	No applicable information is available.

SECTION 5: FIRE-FIGHTING MEASURES	
Suitable (and unsuitable) extinguishing media:	Use: dry sand, alcohol-resistant foam, carbon dioxide, dry chemical, water fog for larger fires. Do NOT use water jet.
Specific hazards arising from the chemical:	Fire will produce dense black smoke, which may contain hazardous combustion products such as ammonia gas, nitrogen oxides, carbon monoxide and carbon dioxide.
Sensitivity to mechanical impact:	This product is not sensitive to mechanical impact or physical shock.
Sensitivity to static discharge:	Probably not sensitive to static discharge. May accumulate static charge during use.
Special protective equipment and precautions for fire-fighters:	Firefighters should wear appropriate protective equipment. Positive pressure self-contained breathing apparatus (SCBA) should be worn. Cool fully closed containers exposed to fire with water spray. Do not allow run-off from firefighting to enter drains, sewers, ditches, or waterways. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES	
Personal precautions, protective equipment and emergency procedures:	Stop leak, if without risk. No action should be taken involving any personal risk or without suitable training. Evacuate personnel to a safe area. Eliminate all ignition sources and ventilate the area. Avoid breathing fume, mist, vapors or spray. Avoid contact with eyes, skin and clothing. Refer to protective measures listed in Section 8.
Methods and material for containment and cleaning up:	Contain and collect spillage with inert 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.

SECTION 7: HANDLING AND STORAGE	
Precautions for safe handling:	Exclude non-essential personnel. Put on appropriate protective equipment (see Section 8). Avoid contact with eyes, skin and clothing. Avoid breathing fume, mist, vapors or spray. All eating, drinking, and smoking should be prohibited in areas where this material is handled, stored and processed. After handling, workers should wash hands and face before eating, drinking and smoking. Use product in well ventilated areas. Use respiratory protection when ventilation is inadequate. Keep product in its original container or use an approved alternative made from compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Avoid release to the environment.
Conditions for safe storage, including any incompatibilities:	Store in accordance with local regulations. Observe the label precautions. Prevent unauthorized access. Store between 5°C (41°F) and 30°C (86°F) unless otherwise stated in a dry, well-ventilated area away from sources of heat, ignition and direct sunlight. Store product away from oxidizing agents, acids, sodium nitrite and other incompatible materials (see Section 10). Use appropriate containment to avoid environmental contamination. Assure appropriate fire extinguishers are available in close proximity to the storage area.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION	
Exposure limit values:	m-Xylene-α, α'-diamine: ACGIH threshold limit value (TLV): ceiling limit 0.1 mg/m^3 (skin). NIOSH recommended exposure limit (REL): ceiling limit 0.1 mg/m^3 (skin).
Appropriate engineering controls:	Provide adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker's exposure to airborne contaminants below any recommended or statutory limits. If concentrations of particulates and/or vapors are above the relevant occupational exposure limits, suitable respirators should be worn (see "respiratory protection" below).
Individual protection measures:	**Respiratory protection:** When adequate ventilation cannot be achieved, a NIOSH approved air-purifying full facepiece or half-face respirator equipped with appropriate vapor / particulate cartridge(s) is recommended. If the application environment presents the likelihood of contaminants by significant concentrations of dust, the appropriate particulate pre-filter (N-, R-, or P-series) should be worn in combination with the above. It is essential that the facepiece is fitted correctly and that the filter is changed in accordance with the manufacturer's instructions. For spray applications, it is recommended that an NIOSH approved supplied-air respirator (SAR) equipped with a full facepiece is worn when necessary. Where entry into unknown or Immediately Dangerous To Life or Health (IDLH) atmospheres is required, a NIOSH approved full facepiece pressure demand self-contained breathing apparatus (SCBA), or a combination of full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply should be worn. Respirator selection must be based on known or anticipated exposure levels, the hazards of the products and the safe working limits of the selected respirator.
	Hand protection: Chemical-resistant, impervious gloves, complying with an approved standard, should be worn at all times when handling this product, especially when the risk assessment indicates the necessity. Pay close attention to the permeability and breakthrough time of the gloves and change gloves before the breakthrough time is exceeded. If in doubt, seek advice from manufacturers or vendors of the protective gloves in order to determine appropriate types for the particular circumstances.
	Eye protection: It is recommended that eye protection (eg. safety glasses with side shields, goggles, full face shield) is worn at all times during the handling and use of this material, especially when the risk assessment indicates the necessity.
	Other protections: Protective clothing, footwear, and any additional skin protection should be identified and selected based on the task being performed and the risks involved. Protective garments should be approved by a specialist before handling this product.
	Hygiene measures: Wash hands and face thoroughly at the end of each work shift and before eating, smoking and / or using the lavatory. Do not place contaminated articles or equipment into pockets. Ensure eye wash stations and safety showers are readily available. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Amber liquid
Odor:	Amine
Odor threshold:	Not available
pH:	Alkaline
Melting point / freezing point:	Not available
Boiling point / boiling range:	230°C (446 °F)
Flash point:	> 93 °C (199.4°F) Method: closed cup
Evaporation rate:	Not available
Flammability:	Not flammable
Upper / lower flammability or explosive limits:	Not available
Vapor pressure:	< 10.34 mmHg at 21°C (70°F)
Vapor density (Air =1):	Not available
Relative density:	1.00 at 25 °C (77°F)
Solubility in water:	< 0.1 g/L
Partition coefficient n-octanol/water:	Not available
Autoignition temperature:	Not available
Decomposition temperature:	Not available

Viscosity, dynamic:	0.5-1.5 poise at 25 °C (77°F)

SECTION 10: STABILITY AND REACTIVITY	
Reactivity:	No vigorous reaction known under recommended storage and handling conditions (see Section 7).
Chemical stability:	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions:	Under recommended storage and handling conditions, hazardous reactions will not occur.
Conditions to avoid:	No known specific condition to avoid if stored and used as recommended.
Incompatible materials:	Nitrous acid, nitrites, and other nitrosating agents Reactive metals (e.g. sodium, calcium, zinc, etc) Acids Sodium hypochlorite (bleach) Copper, aluminum, zinc and galvanized surfaces Oxidizing agents Materials reactive with hydroxyl compounds
Hazardous decomposition products:	No known hazardous decomposition products if stored and used as recommended.

SECTION 11: TOXICOLOGICAL INFORMATION	
Likely routes of exposure:	Inhalation, ingestion, skin contact, skin absorption, injection, and eye contact.
Symptoms related to the physical, chemical and toxicological characteristics:	See Section 4: “Most important symptoms/effects, acute and delayed”.
Delayed and immediate effects and also chronic effects from short and long-term exposure:	**Acute toxicity:** Harmful if swallowed. See toxicity data below. For most important symptoms/effects, see Section 4.
	Skin corrosion / irritation: Causes severe skin burns and eye damage. For most important symptoms/effects, see Section 4.
	Eye damage / irritation: Causes serious eye damage. For most important symptoms/effects, see Section 4.
	Respiratory and skin sensitization: Skin contact may cause an allergic skin reaction.
	Germ cell mutagenicity: There is no data on the product itself. Available information on the individual components does not indicate a mutagenic hazard.
	Carcinogenicity: There is no data on the product itself. None of the components in concentration of 0.1% or greater are listed as carcinogens according to OSHA, NTP, or IARC.
	Reproductive / developmental toxicity: There is no data on the product itself. For 4-nonylphenol, laboratory tests in rats have shown 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 reproductive effects is 15 mg/kg/day.
	Specific target organ toxicity - single exposure: Product may cause respiratory tract irritation. May also cause central nervous system effects. Laboratory tests in rats have shown that acute exposure to an aerosol of 1, 3-benzenedimethanamine caused adverse effects principally in the lung. However changes in liver and kidneys were also noted.
	Specific target organ toxicity - single exposure: There is no data available.
	Aspiration hazard: There is no data available.
Name of toxicologically synergistic products:	There is no data available.
Numerical measures of toxicity:	**Acute toxicity:** Oral: LD_{50}: 1,750 mg/kg, species : rat Dermal: LD_{50} > 2,000 mg/kg (estimated), species: rabbit
	Repeated dose toxicity: There is no data on the product itself. Component: 4-nonylphenol, branched Species: rat Application route: oral Exposure time: 28 days, 7 days / week NOAEL: 100 mg/kg Component: 4-nonylphenol, branched Species: rat Application route: oral Exposure time: 90 days, 7 days / week NOAEL: 50 mg/kg

SECTION 12: ECOLOGICAL INFORMATION	
Ecotoxicity:	**Aquatic toxicity:** There is no data on the product itself. Based on the individual component data, the product is expected to have experimental LC_{50} / EC_{50} / ErC_{50} values between 1 and 10 mg/L in most sensitive species.
Persistence and degradability:	There is no data available on the product itself. Based on the individual component data, this product is not expected to be readily biodegradable.

Bioaccumulative potential:	There is no data available on the product itself. Based on the individual component data, this product is expected to bioaccumulate.
Mobility in soil:	There is no data available.
Other adverse effects:	No known significant effects or critical hazards.

SECTION 13: DISPOSAL CONSIDERATIONS	
Disposal methods:	Generation of waste should be avoided or minimized, if possible. Do NOT dump into any sewers, on the ground, or into any body of water. This product as shipped in its intended condition meets the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261. 20-24): "Corrosivity"-RCRA Code D002. Contaminated packaging should also be disposed of as hazardous 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. Disposal must be in compliance with all Federal, State / Provincial and local laws and regulations. Regulations may vary in different locations. It is the generator's responsibility to determine the toxicity and physical properties of the material generated, and further to determine the proper waste classification and disposal methods.

SECTION 14: TRANSPORT INFORMATION	
US Department of Transportation (DOT):	UN number: UN2735 Proper shipping name: Amines, liquid, corrosive, N.O.S. (containing benzene-1,3-dimethanezmine and trimethylhexamethylenediamine) Transport hazard class: 8 Packing Group: II. Environmental hazards: No.
Canada Transportation of Dangerous Goods (TDG):	UN number: UN2735 Proper shipping name: Amines, liquid, corrosive, N.O.S. (containing benzene-1,3-dimethanezmine and trimethylhexamethylenediamine) Transport hazard class: 8 Packing Group: II. Environmental hazards: No.
International Air Transport Association (IATA):	UN number: UN2735 Proper shipping name: Amines, liquid, corrosive, N.O.S. (containing benzene-1,3-dimethanezmine and trimethylhexamethylenediamine) Transport hazard class: 8 Packing Group: II. Environmental hazards: environmentally hazardous substance.
International Maritime Dangerous Goods (IMDG):	UN number: UN2735 Proper shipping name: Amines, liquid, corrosive, N.O.S. (containing benzene-1,3-dimethanezmine and trimethylhexamethylenediamine) Transport hazard class: 8 Packing Group: II. Environmental hazards: marine pollutant.
Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC code):	Not carried in bulk.
Special precautions:	No applicable information is available.
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.

SECTION 15: REGULATORY INFORMATION	
OSHA Hazard Communication Standard:	This product is considered "Hazardous" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA chemical substance inventory:	All constituents of this product are included on the inventory or are not required to be listed.
SARA 302 extremely hazardous substance:	Not listed.
SARA 311/312 hazards:	Acute and chronic health hazard.
SARA 313 toxic chemicals:	Not listed.
California Proposition 65:	Not listed.
Canada WHMIS classification:	D2A, D2B, E. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.
Canada WHMIS label:	
DSL and NDSL:	All constituents of this product are present on the DSL or are not required to be listed.

SECTION 16: OTHER INFORMATION	
Abbreviations:	ACGIH = American Conference of Government Industrial Hygienists CAS = Chemical Abstracts Service DSL = Domestic Substances list EPA = Environmental Protection Agency IARC = International Agency for Research on Cancer

	NDSL = Non-domestic Substances List NIOSH = National Institute for Occupational Safety and Health NOAEL = No Observable Adverse Effect Level NTP = National Toxicology Program OSHA = Occupational Safety and Health Administration RCRA = Resource Conservation and Recovery Act SARA = Superfund Amendment And Reauthorization Act TSCA = Toxic Substance Control Act UN = United Nations WHMIS = Workplace Hazardous Materials Information System
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