MATERIAL SAFETY DATA SHEET
In compliance with OSHA 29 CFR 1910.1200
N.ap means Not Applicable NIA means No Information Available

PREPARED BY : N.A.ROBINSON DATE PREPARED : 6 OCT 1999

BELZONA INC., 2000 N.W. 88 COURT, MIAMI, FL 33172	EMERGENCY PHONE NUMBERS (Spill, Leak, Fire, Exposure or Accident) 800 424 9300 - Toll free in United States 202 483 7616 - For calls from outside the United States INFORMATION PHONE NUMBER 305 594 4994 - Working hours only

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER : 3211/1497/01/0
PRODUCT NAME : Belzona® 4181 Base
PRODUCT CLASS : Modified epoxide resin

SECTION II - HAZARDOUS INGREDIENTS/TOXICOLOGICAL DATA

Hazardous Components	% by Weight	CAS Number	Exposure Limits OSHA PEL mg/m^3	ACGIH TLV ppm	ACGIH TLV mg/m^3	Toxicity LD_{50} Oral mg/Kg	LD_{50} Dermal	LC_{50} Inhal ppm
Epoxy phenol novolac resin	60-90	28064-14-4	NIA	NIA	NIA	>5000	NIA	NIA
Organosilane ester	10-30	2530-83-8	NIA	NIA	NIA	>5000	NIA	NIA

CARCINOGENICITY
No data is available for the mixture, however, none of the ingredients are listed as carcinogens by OSHA, NTP, ACGIH or IARC.

SECTION III - PHYSICAL DATA

APPEARANCE AND ODOR : Clear light yellow liquid.
BOILING POINT : Decomposes
VAPOR PRESSURE : NIA
EVAPORATION RATE : N.ap
SOLUBILITY IN WATER : Insoluble
SPECIFIC GRAVITY : 1.18
VAPOR DENSITY : NIA
% VOLATILE BY VOLUME : N.ap

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : >100°C
TEST METHOD : ASTM D1310 Tag open cup
EXPLOSION LIMITS LOWER : None
UPPER : None

OSHA FLAMMABILITY CLASS : N.ap
FLAMMABILITY INDEX (NFPA) : 1 Slight
REACTIVITY INDEX (NFPA) : 0 Nil
HEALTH HAZARD (NFPA) : 2 Moderate
EXTINGUISHING MEDIA : Foam, carbon dioxide, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES
Wear protective clothing and use self-contained breathing apparatus. Full bunker gear should be worn in extreme cases. Use sand to contain burning material.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Decomposition and combustion products may be hazardous.

SECTION V - HEALTH HAZARDS

ROUTE(S) OF ENTRY : Skin contact, skin absorption, eye contact, swallowing.
PRIME HAZARD(S) : Skin sensitizer and skin irritation.

EFFECTS OF EXPOSURE
Acute : Skin and eye irritation, nausea, abdominal pain, dizziness.
Chronic : Irritation, sensitization and allergic responses.

EMERGENCY AND FIRST AID PROCEDURES
Inhalation : If symptoms are experienced, remove source of contamination and/or move victim to fresh air. If recovery is delayed or there are signs of distress obtain medical attention immediately.

Eye contact : Flush eyes with water for 15 minutes. Seek medical advice if any irritation persists.

Skin contact : Immediately remove excess with a clean cloth and wash skin thoroughly with soap and water. If irritation or inflammation persists, seek medical advice.

Ingestion : The product may hydrolyze in the stomach to form methanol. Methanol is Toxic. Effects may be delayed. If swallowed, do not induce vomiting. Rinse mouth with water and drink plenty of water. Call TAMPA BAY Regional Poison Center (Tel.No.1-800-282-3171) and/or seek medical advice.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin and eye conditions.

SECTION VI - REACTIVITY DATA

STABILITY : Stable
STABILITY CONDITIONS TO AVOID : N.ap

INCOMPATIBILITY (MATERIALS TO AVOID CONTACT WITH)
Strong oxidizing agents, acids and bases. Amines under uncontrolled conditions.

HAZARDOUS DECOMPOSITION PRODUCTS
Gaseous combinations of carbon, hydrogen and oxygen may occur at elevated temperatures.

HAZARDOUS POLYMERIZATION
Hazardous polymerization will not occur when stored and used as directed.

POLYMERIZATION CONDITIONS TO AVOID
N.ap

SECTION VII - SPILL AND LEAK PROCEDURES

SPILLAGE
Absorb with an inert material (e.g. earth or sand). Sweep up, place into suitable labelled containers, seal and dispose of properly. Flush area with detergent and water.

WASTE DISPOSAL METHODS
Dispose of in accordance with Local, State and Federal Regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE MEASURES

RESPIRATORY : In confined areas or where good natural/mechanical ventilation is not available an appropriate NIOSH or MSHA approved respirator should be worn.

SKIN : Impermeable gloves, such as Neoprene or Nitrile. Wash hands with soap and water and use hand cream. Suitable protective clothing to minimize skin contact. Remove contaminated clothing and wash before reuse.

EYE : Safety glasses or goggles. Eyewash station.

MECHANICAL PROTECTIVE MEASURES

VENTILATION : Where adequate natural ventilation is not available provide suitable local exhaust ventilation.

OTHER PROTECTIVE EQUIPMENT

: Where there is a risk of contamination of footwear, safety boots should be worn and cleaned thoroughly before reuse.

OTHER COMMENTS

: Where machining or abrading of cured material leads to the production of respirable and/or nuisance dust, an appropriate NIOSH or MSHA approved respirator should be worn.

SECTION IX - SAFE HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS
HANDLING
Avoid contact with skin and eyes.

STORAGE

Overheating may cause containers to rupture. Containers should be stored under cool, dry conditions. Empty containers will retain residue and may be dangerous. Check all containers for leaks at regular intervals and before use.

HYGIENE PRACTICES

When using, do not eat, drink or smoke. Remove contaminated clothing and launder before reuse. Wash hands with soap and water after handling this product.

SECTION X - REGULATORY INFORMATION

SARA TITLE III - NOTIFICATION OF TOXIC CHEMICALS

None of the constituents of this product are subject to reporting requirements under section 313 of the Superfund Amendment and Reauthorization Act of 1986 (40 CFR Part 372).

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. believe 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.

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PREPARED BY : N.A.ROBINSON DATE PREPARED : 02 MAY 2000

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SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER : 3311/1498/01/0
PRODUCT NAME : Belzona® 4181 Solidifier
PRODUCT CLASS : Polyamine

SECTION II - HAZARDOUS INGREDIENTS/TOXICOLOGICAL DATA

Hazardous Components	% by Weight	CAS Number	Exposure Limits OSHA PEL mg/m^3	ACGIH TLV ppm	ACGIH TLV mg/m^3	Toxicity LD_{50} Oral mg/Kg	LD_{50} Dermal mg/Kg	LC_{50} Inhal ppm
1,3-Benzene-dimethanamine	60-100	1477-55-0	NIA	NIA	0.1*	930	NIA	NIA
Reactive diluent	5-10	Trade secret	200	50	40	NIA	NIA	NIA

*(C) Ceiling. The concentration shall not be exceeded during any part of the working exposure.

CARCINOGENICITY
This product is not listed as a carcinogen by OSHA, NTP, ACGIH or IARC.

SECTION III - PHYSICAL DATA

APPEARANCE AND ODOR : Colourless liquid with amine odor.
BOILING POINT : >150°C
VAPOR PRESSURE : 0.011 hPa @ 20°C
EVAPORATION RATE : NIA
SOLUBILITY IN WATER : Soluble in/with
SPECIFIC GRAVITY : 1.05
VAPOR DENSITY : NIA
% VOLATILE BY VOLUME : 0

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : 134°C
TEST METHOD : NIA
EXPLOSION LIMITS LOWER : NIA
UPPER : NIA

OSHA FLAMMABILITY CLASS : N.ap
FLAMMABILITY INDEX (NFPA) : 1 Slight
REACTIVITY INDEX (NFPA) : 1 Slight
HEALTH HAZARD (NFPA) : 3 Serious
EXTINGUISHING MEDIA : Foam, carbon dioxide, dry chemical.

SPECIAL FIRE FIGHTING PROCEDURES
Wear protective clothing and use self-contained breathing apparatus to protect against any toxic fumes evolved. Full bunker gear should be worn in extreme cases. Use sand to contain burning material.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Decomposition and combustion products may be hazardous.

SECTION V - HEALTH HAZARDS

ROUTE(S) OF ENTRY : Skin contact, skin absorption, eye contact and inhalation.
PRIME HAZARD(S) : Corrosive.

EFFECTS OF EXPOSURE
Acute : May cause burns to skin and eyes upon contact and to mucous membranes if swallowed. Irritating to respiratory tract.
Chronic : Vapor may be harmful by inhalation causing headache and nausea. Liquid may be absorbed through the skin and can cause sensitisation or other allergic responses.

EMERGENCY AND FIRST AID PROCEDURES
Inhalation : If symptoms are experienced, remove source of contamination and/or move victim to fresh air. If recovery is delayed or there are signs of distress obtain medical attention immediately.

Eye contact : Flush eyes with water for 15 minutes. Seek medical advice if any irritation persists.

Skin contact : Immediately remove excess with a clean cloth and wash skin thoroughly with soap and water. If irritation or inflammation persists, seek medical advice.

Ingestion : If swallowed, do not induce vomiting. Rinse mouth with water and drink 1 cup of water every 10 minutes for 30 minutes. Call TAMPA BAY Regional Poison Center (Tel.No.1-800-282-3171) and/or seek medical advice.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin, eye and respiratory conditions.

SECTION VI - REACTIVITY DATA

STABILITY : Stable
STABILITY CONDITIONS TO AVOID : N.ap

INCOMPATIBILITY (MATERIALS TO AVOID CONTACT WITH)
Strong oxidizing agents or acids. Epoxy resins under uncontrolled conditions.

HAZARDOUS DECOMPOSITION PRODUCTS
Gaseous combinations of carbon, hydrogen, nitrogen, fluorine and oxygen may occur at elevated temperatures.

HAZARDOUS POLYMERIZATION
Hazardous polymerization will not occur when stored and used as directed.

POLYMERIZATION CONDITIONS TO AVOID
N.ap

SECTION VII - SPILL AND LEAK PROCEDURES

SPILLAGE
Absorb with an inert material (e.g. earth or sand). Sweep up, place into suitable labelled containers, seal and dispose of properly. Flush area with detergent and water.

WASTE DISPOSAL METHODS
Dispose of in accordance with Local, State and Federal Regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE MEASURES

RESPIRATORY : In confined areas or where good natural/mechanical ventilation is not available an appropriate NIOSH or MSHA approved respirator should be worn.

SKIN : Impermeable gloves, such as Neoprene or Nitrile. Wash hands with soap and water and use hand cream. Suitable protective clothing to minimize skin contact. Remove contaminated clothing and wash before reuse.

EYE : Safety glasses or goggles. Eyewash station.

MECHANICAL PROTECTIVE MEASURES

VENTILATION : Where adequate natural ventilation is not available provide suitable local exhaust ventilation.

OTHER PROTECTIVE EQUIPMENT
: Where there is a risk of contamination of footwear, safety boots should be worn and cleaned thoroughly before reuse.

OTHER COMMENTS
: Where machining or abrading of cured material leads to the production of respirable and/or nuisance dust, an appropriate NIOSH or MSHA approved respirator should be worn.

SECTION IX - SAFE HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS

HANDLING

Avoid breathing vapors and contact with skin and eyes.

STORAGE

Overheating may cause containers to rupture. Containers should be stored under cool, dry conditions. Empty containers will retain residue and may be dangerous. Check all containers for leaks at regular intervals and before use.

HYGIENE PRACTICES

When using, do not eat, drink or smoke. Remove contaminated clothing and launder before reuse. Wash hands with soap and water after handling this product.

SECTION X - REGULATORY INFORMATION

SARA TITLE III - NOTIFICATION OF TOXIC CHEMICALS

None of the constituents of this product are subject to reporting requirements under section 313 of the Superfund Amendment and Reauthorization Act of 1986 (40 CFR Part 372).

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SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER : 3200/1496/01/0
PRODUCT NAME : Belzona® 4181 Aggregate
PRODUCT CLASS : Industrial/Architectural Aggregate

SECTION II - HAZARDOUS INGREDIENTS/TOXICOLOGICAL DATA

Hazardous Components	% by Weight	CAS Number	Exposure Limits OSHA PEL mg/m^3	ACGIH TLV ppm	ACGIH TLV mg/m^3	Toxicity LD_{50} Oral mg/Kg	LD_{50} Dermal mg/Kg	LC_{50} Inhal ppm
Reactive diluent	1-5	Trade secret	200	50	40	275	NIA	NIA
Silica, Quartz	60-100	14808-60-7	0.3	N.ap	0.1	NIA	NIA	NIA

CARCINOGENICITY
Crystalline (respirable) silica is listed by the IARC monographs as probably carcinogenic to humans. The silica in this product, however, is no longer in a respirable form.

SECTION III - PHYSICAL DATA

APPEARANCE AND ODOR : Gray or beige powder with alcohol odor.
BOILING POINT : N.ap
VAPOR PRESSURE : NIA
EVAPORATION RATE : N.ap
SOLUBILITY IN WATER : Negligible (<0.1%)
SPECIFIC GRAVITY : 2.62
VAPOR DENSITY : NIA
% VOLATILE BY VOLUME : N.ap

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : N.ap
TEST METHOD :
EXPLOSION LIMITS LOWER : N.ap
UPPER : N.ap

OSHA FLAMMABILITY CLASS : N.ap
FLAMMABILITY INDEX (NFPA) : 0 Nil
REACTIVITY INDEX (NFPA) : 1 Slight
HEALTH HAZARD (NFPA) : 2 Moderate
EXTINGUISHING MEDIA : N.ap

SPECIAL FIRE FIGHTING PROCEDURES
Not flammable, if involved in a fire this product will not contribute to the combustible material. However, special fire fighting procedures may be required for the other materials involved.

UNUSUAL FIRE AND EXPLOSION HAZARDS
N.ap.

SECTION V - HEALTH HAZARDS

ROUTE(S) OF ENTRY : Skin contact, skin absorption, eye contact, swallowing.
PRIME HAZARD(S) : Toxic by inhalation, in contact with skin and if swallowed.

EFFECTS OF EXPOSURE
Acute : Toxic. May cause skin/eye irritation and burns.
Chronic : Vapour is toxic on prolonged exposure or in high concentration.

EMERGENCY AND FIRST AID PROCEDURES
Inhalation : Not applicable under normal conditions of use.

Eye contact : Flush eyes with water for 15 minutes. Seek medical advice if any irritation persists.

Skin contact : Immediately remove excess with a clean cloth and wash skin thoroughly with soap and water. If irritation or inflammation persists, seek medical advice.

Ingestion : If swallowed, do not induce vomiting. Rinse mouth with water and drink plenty of water. Call TAMPA BAY Regional Poison Center (Tel.No.1-800-282-3171) and/or seek medical advice.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Skin and eye conditions.

SECTION VI - REACTIVITY DATA

STABILITY : Stable
STABILITY CONDITIONS TO AVOID : N.ap

INCOMPATIBILITY (MATERIALS TO AVOID CONTACT WITH)
Strong oxidizing agents, acids, bases and amines.

HAZARDOUS DECOMPOSITION PRODUCTS
Gaseous combinations of carbon, hydrogen and oxygen may occur at elevated temperatures.

HAZARDOUS POLYMERIZATION
Hazardous polymerization will not occur when stored and used as directed.

POLYMERIZATION CONDITIONS TO AVOID
N.ap

SECTION VII - SPILL AND LEAK PROCEDURES

SPILLAGE
Sweep up, place into suitable labelled containers, seal and dispose of properly. Flush area with detergent and water.

WASTE DISPOSAL METHODS
Dispose of in accordance with Local, State and Federal Regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

PERSONAL PROTECTIVE MEASURES
RESPIRATORY : Not necessary under normal conditions of use.

SKIN : Impermeable gloves, such as Neoprene or Nitrile. Wash hands with soap and water and use hand cream. Suitable protective clothing to minimize skin contact. Remove contaminated clothing and wash before reuse.

EYE : Safety glasses or goggles. Eyewash station.

MECHANICAL PROTECTIVE MEASURES
VENTILATION : Not necessary under normal conditions of use.

OTHER PROTECTIVE EQUIPMENT

OTHER COMMENTS
: Where machining or abrading of cured material leads to the production of respirable and/or nuisance dust, an appropriate NIOSH or MSHA approved respirator should be worn.

SECTION IX - SAFE HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS
HANDLING
Avoid contact with skin and eyes. Avoid breathing vapour/dust.

STORAGE
Containers should be stored under cool, dry conditions.

HYGIENE PRACTICES

When using, do not eat, drink or smoke. Wash hands with soap and water after handling this product.

SECTION X - REGULATORY INFORMATION

SARA TITLE III - NOTIFICATION OF TOXIC CHEMICALS

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