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

PREPARED BY : DR.W.R.ASHCROFT DATE PREPARED : 21 OCT 1997

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 : 4001/1074-0743
PRODUCT NAME : Belzona® 5911 (Ceramic Conditioner) Base (Gray-White)
PRODUCT CLASS : Epoxide resin solution

SECTION II - HAZARDOUS INGREDIENTS/TOXICOLOGICAL DATA

Hazardous Components	% by Weight	CAS Number	Exposure Limits OSHA PEL mg/m³	ACGIH TLV ppm	ACGIH TLV mg/m³	Toxicity LD_{50} Oral mg/Kg	LD_{50} Dermal mg/Kg	LC_{50} Inhal ppm
Propylene glycol-monomethylether acetate	15-40	108-65-6	NIA	NIA	NIA	8532	5000	NIA
Titanium dioxide	15-40	13463-67-7	10	N.ap	10	NIA	NIA	NIA
Talc	1-5	14807-96-6	2	N.ap	2	NIA	NIA	NIA
Xylene	7-13	1330-20-7	435	100	434	4300	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 : White or gray liquid with solvent odor.
BOILING POINT : 137°C
SPECIFIC GRAVITY : 1.54
VAPOR PRESSURE : 3.7mm Hg @ 25°C
VAPOR DENSITY : 3.7-5.6
SOLUBILITY IN WATER : Negligible (<0.1%)
Heavier than air
EVAPORATION RATE : NIA
% VOLATILE BY VOLUME : 15-40

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : 32°C
TEST METHOD : Setaflash
EXPLOSION LIMITS LOWER : 1.1
UPPER : 7.0

OSHA FLAMMABILITY CLASS : Flammable liquid - CLASS IC
FLAMMABILITY INDEX (NFPA) : 3 Serious
REACTIVITY INDEX (NFPA) : 1 Slight
HEALTH HAZARD (NFPA) : 2 Moderate
EXTINGUISHING MEDIA : Water fog (not a direct stream of water), 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
Vapors can form explosive mix with air and also vapors may travel considerable distance to source of ignition and flashbacks. Decomposition and combustion products may be hazardous.

SECTION V - HEALTH HAZARDS

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

EFFECTS OF EXPOSURE
Acute : Skin, eye and respiratory tract irritant. Vapors are narcotic and a central nervous system depressant. Causes nausea, dizziness, unconsciousness and is anaesthetic in high concentrations.
Chronic : Irritation, dryness/flaking of skin and dermatitis.

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 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, eye and respiratory tract conditions.

SECTION VI – REACTIVITY DATA

STABILITY : Stable
STABILITY CONDITIONS TO AVOID : N.ap

INCOMPATIBILITY (MATERIALS TO AVOID CONTACT WITH)
Strong oxidizing agents 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
Ventilate well, stop flow of liquid. Remove ignition sources. Do not allow to enter water courses. 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, leading to a risk of exceeding the TLV's indicated, an appropriate NIOSH or MSHA approved respirator should be worn.

SKIN : Impermeable gloves, such as Neoprene, Nitrile or PVC. 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. Keep away from heat, sparks and open flames.

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

Xylene, CAS Number 1330-20-7, a constituent of this product at 10.7% by weight is 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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SECTION I - PRODUCT IDENTIFICATION

PRODUCT NUMBER : 4201/0213
PRODUCT NAME : Belzona® 5911 (Ceramic Conditioner) Solidifier
PRODUCT CLASS : Modified Polyisocyanate

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
Propylene glycol-monomethylether acetate	15-40	108-65-6	NIA	NIA	NIA	8532	5000	NIA
Toluene diisocyanate	0.1-1.0	584-84-9	0.14	0.005	0.036	5800	NIA	66
Xylene	10-30	1330-20-7	435	100	435	4300	NIA	NIA
Ethyl benzene	1-5	100-41-4	435	100	435	4300	NIA	NIA

CARCINOGENICITY

Toluene diisocyanate is listed by NTP in the Fifth Annual report as a substance which may reasonably be anticipated to be a carcinogen. Toluene diisocyanate is also listed by IARC as a Group 2B carcinogen (i.e. possibly carcinogenic to humans, on the bases of animal studies).

SECTION III - PHYSICAL DATA

APPEARANCE AND ODOR : Clear pale yellow liquid with solvent odor.

BOILING POINT	: 137°C	SPECIFIC GRAVITY	: 1.16
VAPOR PRESSURE	: 3.7mm Hg @ 25°C	VAPOR DENSITY	: 3.7-5.6
SOLUBILITY IN WATER	: Negligible (<0.1%)		(Heavier than air)
EVAPORATION RATE	: NIA	% VOLATILE BY VOLUME	: 15-40

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	: 36°C	EXPLOSION LIMITS	LOWER	: 1.1
TEST METHOD	: Setaflash		UPPER	: 10.8

OSHA FLAMMABILITY CLASS : Flammable liquid - CLASS IC
FLAMMABILITY INDEX (NFPA) : 3 Serious
REACTIVITY INDEX (NFPA) : 1 Slight
HEALTH HAZARD (NFPA) : 2 Moderate
EXTINGUISHING MEDIA : Water fog (not a direct stream of water), 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

Vapors can form explosive mix with air and also vapors may travel considerable distance to source of ignition and flashbacks. Decomposition and combustion products may be hazardous.

SECTION V - HEALTH HAZARDS

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

EFFECTS OF EXPOSURE

Acute : Skin, eye and respiratory tract irritant - symptoms can be delayed up to several hours after exposure. Solvent vapors are narcotic and a central nervous system depressant. Causes nausea, dizziness, unconsciousness and is anaesthetic in high concentrations.

Chronic : Chemical asthma, sensitization and dermatitis.

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 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

Asthma, other respiratory disorders, skin allergies and eczema.

SECTION VI - REACTIVITY DATA

STABILITY : Stable
STABILITY CONDITIONS TO AVOID : N.ap

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

HAZARDOUS DECOMPOSITION PRODUCTS
Gaseous combinations of carbon, hydrogen, oxygen and nitrogen 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
Ventilate well, stop flow of liquid. Remove ignition sources. Do not allow to enter water courses. Absorb with a dry inert material (e.g. 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, leading to a risk of exceeding the TLV's indicated, an appropriate NIOSH or MSHA approved respirator should be worn.

SKIN : Impermeable gloves, such as Neoprene, Nitrile or PVC. 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. Keep away from heat, sparks and open flames.

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

Xylene, CAS Number 1330-20-7, and ethyl benzene, CAS Number 100-41-4, constituents of this product at 13.3% and 3.1% by weight, respectively, are subject to reporting requirements under section 313 of the Superfund Amendment and Reauthorization Act of 1986 (40 CFR Part 372).

DISCLAIMER

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