WHMIS MATERIAL SAFETY DATA SHEET

SECTION 1 - Product Identification and Use			Date : **23 October, 2000**
Product identifier : **BELZONA® 4411 (GRANOGRIP) BASE**			PIN/UN No : **Not applicable**
Product use : **Repair and Reclamation**			WHMIS classification : **D2B**
Manufacturer's name & address : **BELZONA POLYMERICS Ltd.,** Claro Road, Harrogate, Yorkshire, HG1 4AY, United Kingdom. Emergency telephone number : U.K. -44-1423-503218	Supplier's name & address : **BELZONA Inc.,** 2000 N.W. 88 Court, America's Gateway Park, Miami, Florida 33172, United States.	Supplier's emergency telephone numbers : (Spill, Leak, Fire, Exposure or Accident) 800 424 9300 - Toll free in Canada 202 483 7616 Information telephone number : 305 594 4994 - Working hours only	

SECTION 2 - Hazardous Ingredients

Hazardous Ingredients	Approximate Concentration	CAS Numbers	Exposure Limits	LD_{50}/LC_{50} Species and Route
Epoxy resin (Number average molecular weight ≤700)	**60-100%**	**25068-38-6**	**Not available**	**Oral LD_{50} >5000mg/kg rat**
Butanedioldiglycidyl ether	**1-5%**	**2425-79-8**	**Not available**	**Oral LD_{50} approx. 2000mg/kg rat**
Amorphous silica	**1-5%**	**7631-86-9**	**Not available**	**Not available**

SECTION 3 - Physical Data

Physical state : **Paste**	Appearance/Odour : **Grey, yellow or red/ epoxy**	Odour threshold(ppm) : **Not applicable**
Vapour pressure (mm Hg) : **0.01 @ 25°C**	Vapour density (Air = 1) : **>1**	Boiling point (°C) : **>200°C**
pH : **Not applicable**	Specific gravity : **1.19**	Coefficient water/oil : **Not applicable**
Freezing point (°C) : **Not available**	Solubility in water (20°C) : **Negligible**	Evaporation rate (relative to n-Butyl Acetate) : **Not applicable**

SECTION 4 - Fire and Explosion Data

Flammability : If yes, under which conditions :	**Not flammable, but combustible**	
Means of extinction :	**Water fog, foam, carbon dioxide, dry chemical.**	
Special 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.**	
Flash point and method : **>96°C Closed Cup**	Explosion limits (% by volume) : Lower : **Not available** Upper : **Not available**	Autoignition temp (°C) : **Not available**
Hazardous combustion products : **Gaseous combinations of carbon, hydrogen and oxygen**		
Explosion data - Sensitivity to impact : **Not applicable**	Explosion data - Sensitivity to static discharge : **Not available**	

SECTION 5 - Reactivity Data

Chemical stability : If no, under which conditions :	**Yes**
Incompatibility to other substances : If yes, which ones :	**Yes** **Strong oxidizing agents, acids, bases, amines**
Reactivity and under what conditions :	**Not applicable**
Hazardous decomposition products :	**See hazardous combustion products above**

SECTION 6 - Toxicological Properties of Product

Route of entry :
Skin contact : √ Skin absorption : Eye contact : √ Inhalation acute : Inhalation chronic : Ingestion :

Effects of acute exposure to product : **None known.**

Effects of chronic exposure to product : **None known.**

LD_{50} of product (species and route) : **Not available**	Irritancy of product : **Moderate to extreme on skin/eyes**	Exposure limits of product : **Not available**
LC_{50} of product (species and route) : **Not available**	Sensitization to product : **Skin, on repeated contact**	Synergistic materials : **Not available**

Carcinogenicity : **N.av*** Reproductive effects : **N.av*** Teratogenicity : **N.av*** Mutagenicity : **N.av***

*** Not available for the mixture, however available information on the individual components does not indicate any chronic exposure hazard other than that stated above.**

SECTION 7 - Preventative Measures

Personal protective equipment :	Gloves : **Use neoprene or nitrile**	Eye : **Goggles/faceshield**
Footwear : **Industrial boots**	Respiratory (protection required if exposure > TLV) : **Not applicable**	Clothing : **Overalls**

Other :

Engineering controls :	**Provide adequate cross air circulation.**
Leak and spill procedures :	**Contain with an inert material (e.g. earth or sand). Sweep up and place into suitable covered, labelled containers. Flush area with detergent and water.**
Waste disposal :	**In accordance with Federal, Provincial and Local Regulations.**
Handling procedures :	**Avoid contact with skin and eyes.**
Storage requirements :	**Keep in a cool, well ventilated place, in the original containers.**

SECTION 8 - First Aid Measures

Skin :	**After contact with skin, wash immediately with plenty of soap and water.**
Eye :	**In case of contact with eyes, rinse immediately with plenty of water and seek medical advice if any irritation persists.**
Inhalation :	**If symptoms are experienced, remove source of contamination or move victim to fresh air. Obtain medical attention immediately if recovery is delayed.**
Ingestion :	**Do not induce vomiting. Immediately rinse the mouth with water. Drink plenty of water (1 pint/600 mls). Seek medical attention promptly.**
General advice :	**When using do not eat, drink or smoke. Take off immediately all contaminated clothing and launder before reuse. Wash hands thoroughly after handling this product.**

SECTION 9 - Preparation Date of MSDS

Additional information : **Replaces previous issue dated 8 October 1997**

Prepared by :	Phone number :	Date :
N.A.Robinson	**U.K. -44-1423-567641**	**23 October, 2000**

WHMIS MATERIAL SAFETY DATA SHEET

SECTION 1 - Product Identification and Use		Date : **23 October, 2000**
Product identifier : **BELZONA® 4411 (GRANOGRIP) SOLIDIFIER**		PIN/UN No : **2735**
Product use : **Repair and Reclamation**		WHMIS classification : **D2B,E**
Manufacturer's name & address : **BELZONA POLYMERICS Ltd.,** Claro Road, Harrogate, Yorkshire, HG1 4AY, United Kingdom. Emergency telephone number : U.K. -44-1423-503218	Supplier's name & address : **BELZONA Inc.,** 2000 N.W. 88 Court, America's Gateway Park, Miami, Florida 33172, United States.	Supplier's emergency telephone numbers : (Spill, Leak, Fire, Exposure or Accident) 800 424 9300 - Toll free in Canada 202 483 7616 Information telephone number : 305 594 4994 - Working hours only

SECTION 2 - Hazardous Ingredients

Hazardous Ingredients	Approximate Concentration	CAS Numbers	Exposure Limits	LD_{50}/LC_{50} Species and Route
Isophoronediamine	**10-30%**	**2855-13-2**	**Not available**	**Oral LD_{50} 1030 mg/kg (rat)**
Trimethylhexane-1,6-diamine	**10-30%**	**25620-58-0**	**Not available**	**Oral LD_{50} 910 mg/kg (rat)**
Benzyl alcohol	**10-30%**	**100-51-6**	**Not available**	**Oral LD_{50} = 1230 mg/kg (rat)**
Cycloaliphatic amine preparation	**10-30%**	**—**	**Not available**	**Not available**
Paraisononylphenol	**7-13%**	**25154-52-3**	**Not available**	**Oral LD_{50} 580 mg/kg (rat)**

SECTION 3 - Physical Data

Physical state : **Liquid**	Appearance/Odour : **Clear/amine**	Odour threshold(ppm) : **Not applicable**
Vapour pressure (mm Hg) : **0.22 @ 25°C**	Vapour density (Air = 1) : **>1**	Boiling point (°C) : **>95°C**
pH : **Not applicable**	Specific gravity : **0.98**	Coefficient water/oil : **Not applicable**
Freezing point (°C) : **Not available**	Solubility in water (20°C) : **Partially miscible**	Evaporation rate (relative to n-Butyl Acetate) : **Not applicable**

SECTION 4 - Fire and Explosion Data

Flammability : If yes, under which conditions :	**Not flammable but combustible**	
Means of extinction :	**Water fog, foam, carbon dioxide, dry chemical.**	
Special 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.**	
Flash point and method : **>93.3°C Closed cup**	Explosion limits (% by volume) : Lower : **Not available** Upper : **Not available**	Autoignition temp (°C) : **Not available**
Hazardous combustion products : **Gaseous combinations of carbon, hydrogen, nitrogen and oxygen**		
Explosion data - Sensitivity to impact : **Not applicable**	Explosion data - Sensitivity to static discharge : **Not available**	

SECTION 5 - Reactivity Data

Chemical stability : If no, under which conditions :	**Yes**
Incompatibility to other substances : If yes, which ones :	**Yes** **Strong oxidizing agents, strong acids, epoxy resins, isocyanates, under uncontrolled conditions.**
Reactivity and under what conditions :	**Not applicable**
Hazardous decomposition products :	**See hazardous combustion products above**

Product identifier : **BELZONA® 4411 (GRANOGRIP) SOLIDIFIER**

SECTION 6 - Toxicological Properties of Product

Route of entry :
Skin contact : √ Skin absorption : Eye contact : √ Inhalation acute : √ Inhalation chronic : Ingestion : √

Effects of acute exposure to product : **Causes burns. Harmful by inhalation, in contact with skin and if swallowed.**

Effects of chronic exposure to product : **None known**

LD_{50} of product (species and route) :	Irritancy of product :	Exposure limits of product :
>970 mg/kg oral rat †	**Extreme on skin/eyes**	**Not available**
LC_{50} of product (species and route) :	Sensitization to product :	Synergistic materials :
Not available	**Skin, on repeated contact**	**Not available**

Carcinogenicity : **N.av*** Reproductive effects : **N.av*** Teratogenicity : **N.av*** Mutagenicity : **N.av***

*** Not available for the mixture, however available information on the individual components does not indicate any chronic exposure hazard other than that stated above.**

† Equivalent LD_{50}, According to method described in Section 45 of the Controlled Products Regulations.

SECTION 7 - Preventative Measures

Personal protective equipment :	Gloves :	Eye :
	Use neoprene or nitrile	**Goggles/faceshield**
Footwear :	Respiratory (protection required if exposure > TLV) :	Clothing :
Industrial boots	**NIOSH organic vapour**	**Overalls**

Other :

Engineering controls :	**Where adequate natural ventilation is not available provide suitable local exhaust ventilation.**
Leak and spill procedures :	**Contain with an inert material (e.g. earth or sand). Sweep up and place into suitable covered, labelled containers. Flush area with detergent and water.**
Waste disposal :	**In accordance with Federal, Provincial and Local Regulations.**
Handling procedures :	**Avoid contact with skin and eyes. Do not breathe fumes/vapour.**
Storage requirements :	**Keep in a cool, well ventilated place, in the original containers.**

SECTION 8 - First Aid Measures

Skin :	**After contact with skin, wash immediately with plenty of soap and water.**
Eye :	**In case of contact with eyes, rinse immediately with plenty of water and seek medical advice if any irritation persists.**
Inhalation :	**If symptoms are experienced, remove source of contamination or move victim to fresh air. Obtain medical attention immediately if recovery is delayed.**
Ingestion :	**Do not induce vomiting. Immediately rinse the mouth with water. Drink one third of a pint/200 mls. of water every ten minutes for 30 minutes. Seek medical attention promptly.**
General advice :	**When using do not eat, drink or smoke. Take off immediately all contaminated clothing and launder before reuse. Wash hands thoroughly after handling this product.**

SECTION 9 - Preparation Date of MSDS

Additional information : **Replaces previous issue dated 24 October 1997**

Prepared by :	Phone number :	Date :
N.A.Robinson	**U.K. -44-1423-567641**	**23 October, 2000**