WHMIS MATERIAL SAFETY DATA SHEET

SECTION 1 - Product Identification and Use		Date : **12 May, 1998**
Product identifier : **BELZONA® 4811 BASE**		PIN/UN No : **Not applicable**
Product use : **Repair of Machinery and Equipment**		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
Diglycidyl ether of Bisphenol A epoxy resin	**5-10%**	**25068-38-6**	**Not available**	**Oral LD_{50}>5g/kg rat**
Diglycidyl ether of Bisphenol F epoxy resin	**5-10%**	**28064-14-4**	**Not available**	**Oral LD_{50}>5g/kg rat**

SECTION 3 - Physical Data

Physical state : **Damp Aggregate**	Appearance/Odour : **Black/epoxy**	Odour threshold(ppm) : **Not applicable**
Vapour pressure (mm Hg) : **Not available**	Vapour density (Air = 1) : **Not applicable**	Boiling point (°C) : **Decomposes**
pH : **Not applicable**	Specific gravity : **3.15**	Coefficient water/oil : **Not applicable**
Freezing point (°C) : **Not available**	Solubility in water (20°C) : **Insoluble**	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 :	**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 : **240°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 and bases. Amines under uncontrolled conditions**
Reactivity and under what conditions :	**Not applicable**
Hazardous decomposition products :	**See hazardous combustion products above**

Product identifier : **BELZONA® 4811 BASE**

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 : **Irritating to eyes and skin.**

Effects of chronic exposure to product : **May cause sensitization by skin contact.**

LD_{50} of product (species and route) :	Irritancy of product :	Exposure limits of product :
Oral (rat) >2000 mg kg^{-1}	**Moderate to 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.ap** Reproductive effects : **N.ap** Teratogenicity : **N.ap** Mutagenicity : **N.ap**

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 : **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 :
Dr.W.R.Ashcroft	**U.K. -44-1423-567641**	**12 May, 1998**

WHMIS MATERIAL SAFETY DATA SHEET

SECTION 1 - Product Identification and Use		Date : **12 May, 1998**
Product identifier : **BELZONA® 4811 SOLIDIFIER**		PIN/UN No : **1760**
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
Trimethylhexamethylenediamine	**10-30%**	**3236-53-1**	**Not available**	**Oral LD_{50} = 1750 mg kg^{-1} (rat)**
4-tert-Butylphenol	**30-60%**	**98-54-4**	**ACGIH TLV = 30 mg/m³**	**Oral LD_{50} = 2951 mg/kg (rat)**
m-Xylenediamine	**10-30%**	**1477-55-0**	**ACGIH TLV = 0.1 mg/m³ (Ceiling)**	**Oral LD_{50} = 1600 mg/kg (rat)**

SECTION 3 - Physical Data

Physical state : **Liquid**	Appearance/Odour : **Pale amber/amine**	Odour threshold(ppm) : **Not available**
Vapour pressure (mm Hg) : **Not available**	Vapour density (Air = 1) : **Not available**	Boiling point (°C) : **>230**
pH : **Not applicable**	Specific gravity : **1.0**	Coefficient water/oil : **Not available**
Freezing point (°C) : **Not applicable**	Solubility in water (20°C) : **Insoluble**	Evaporation rate (relative to n-Butyl Acetate) : **Not applicable**

SECTION 4 - Fire and Explosion Data

Flammability : **Not flammable, but combustible** If yes, under which conditions :		
Means of extinction : **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 : **110°C Pensky-Martin 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 : **Yes** If no, under which conditions :	
Incompatibility to other substances : **Yes** If yes, which ones :	**Strong oxidizing agents, strong acids. Epoxy resins under uncontrolled conditions.**
Reactivity and under what conditions :	**Not applicable**
Hazardous decomposition products :	**See hazardous combustion products above**

Product identifier : **BELZONA® 4811 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 and if swallowed.**

Effects of chronic exposure to product : **May cause sensitization by skin contact.**

LD_{50} of product (species and route) :	Irritancy of product :	Exposure limits of product :
Oral (rat) 1750 mg kg^{-1}	**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.**

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 :	**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 breathing vapours and 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. If irritation or inflammation persists, seek medical attention.**
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 8 October 1997**

Prepared by :	Phone number :	Date :
Dr.W.R.Ashcroft	**U.K. -44-1423-567641**	**12 May, 1998**