

World leaders in the conservation of man-made resources and the environment

#### 1. PRODUCT NAME Belzona® 1341 (Supermetalglide)

A coating system for improving the efficiency of fluid handling systems and protecting metals from the effects of erosion-corrosion.

# 2. MANUFACTURER

**Belzona Polymerics Ltd.,** Claro Road, Harrogate, HG1 4AY, England.

#### Belzona Inc.,

2000 N.W. 88 Court, Miami, Florida 33172, U.S.A.

# 3. PRODUCT DESCRIPTION

A two component system specifically designed to improve the efficiency of fluid handling equipment and to protect all metals from the effects of erosion-corrosion.

Applications Pumps Heat exchangers Water boxes Valves Water tanks Pipes

# 4. TECHNICAL DATA

Base component Appearance Color Density	Thixotropic paste Gray or Blue 1.58-1.63 g/cm³
<u>Solidifier_component</u> Appearance Color Density	Clear liquid Clear 1.17-1.19 g/cm³
Mixed properties Mixing ratio by weight Mixing ratio by volume Density Viscosity at 45°C	100 : 70 1 : 1 1.39 g/cm <sup>3</sup> 2,000cps

# • Limitations of Use

**Belzona® 1341** should not be used at temperatures below 50°F (10°C). Where material has been stored below this temperature, warm the Base and Solidifier units until they attain a temperature of 68-77°F (20-25°C).

#### • Shelf life

Separate Base and Solidifier components shall have a shelf life of at least 3 years when stored between 32°F (0°C) and 86°F (30°C).

## • Working life

Will vary according to temperature.

<u>Temperature</u>	<u>Working life</u>
50°F (10°C)	90 minutes
59°F (15°C)	60 minutes
68°F (20°C)	45 minutes
77°F (25°C)	30 minutes
86°F (30°C)	20 minutes

#### • Coverage rate

To achieve the correct film thickness of 10 mils (250 microns), a practical coverage rate of 13 sq. ft (1.2 sq. m) per 500g unit should be obtained or 130 sq. ft (12 sq. m) per 5kg.

## • Volume capacity

The volume capacity of mixed **Belzona® 1341** is 220 in.<sup>3</sup> (3.6 litres) / 5kg.

#### • Cure time

At a thickness of approximately ¼ in. (6 mm) allow to cure for the times shown in the chart below before subjecting it to the conditions indicated.

# PRODUCT SPECIFICATION SHEET BELZONA<sup>®</sup> 1341

#### 5. PHYSICAL/MECHANICAL PROPERTIES

Determined after 7days cure at 68°F (20°C).

#### Abrasion resistance

Tabel	
The sliding abrasion resistance us	ing Taber
Abraser using H10/CS17 wheels a	and 1kg
load is typically:	-
Wet	22 mm <sup>3</sup>
Dry	10 mm <sup>3</sup>
Loss per 1000 cycles	

#### Adhesion

Tensile shear When tested in accordance with ASTM D1002 using degreased strips, grit blasted to a 3-4mil (75 micron) profile, typical values obtained will be:

Mild steel	3,300 psi (232 kg/cm <sup>2</sup> )
Stainless steel	3,300 psi (232 kg/cm <sup>2</sup> )
Copper	2,900 psi (204 kg/cm <sup>2</sup> )
Aluminum	2,200 psi (154 kg/cm <sup>2</sup> )

# • Cavitation resistance

When tested to a modified version of ASTM G32 using stationary specimens at 20KHz frequency and 50 microns amplitude a typical volume loss will be 29 mm<sup>3</sup>/ hour.

#### Chemical resistance

Once fully cured, the material will demonstrate excellent resistance to the following chemicals:

40% Sodium hydroxide 25% Ammonia Ethylene glycol Diethlether Petrol Methylated spirit

CURE TIMES					
TEMPERATURE	50°F (10°C)	59°F (15°C)	68°F (20°C)	77°F (25°C)	86°F (30°C)
Movement or use involving no loading	24 hours	12 hours	8 hours	7 hours	6 hours
Movement or use involving light loading Full mechanical/thermal	48 hours	24 hours	16 hours	14 hours	12 hours
loading or water immersion Immersion in chemicals	14 days 21 days	7 days 10 days	3 days 7 days	2½ days 6 days	2 days 5 days

## Compressive yield strength

When tested in accordance with ASTM D695 typical values obtained will be: 68°F (20°C) cure 8,800 psi (619 kg/cm<sup>2</sup>) 212°F (100°C) cure 10,010 psi (711 kg/cm<sup>2</sup>)

#### Electrical properties

Dielectric Strength

When tested in accordance with ASTM D149 typical values obtained will be: 208 volts/mil (8320 volts/mm).

#### **Dielectric Constant**

When tested in accordance with ASTM D150 typical values obtained will be: 6.89 at 1 MHz 7.22 at 1000Hz

#### **Dissipation Factor**

When tested in accordance with ASTM D150 typical values obtained will be: < 0.0002 at 1MHz 0.0050 at 1000Hz

<u>Volume Resistivity</u> When tested in accordance with ASTM D257 typical values obtained will be: > 1.85 x 10<sup>14</sup>

<u>Surface Resistivity</u> When tested in accordance with ASTM D257 typical values obtained will be: > 2.3 x 10<sup>13</sup>

#### • Flexural strength

When tested in accordance with ASTM D790 typical values obtained will be: 68°F (20°C) cure 6,850 psi (482 kg/cm<sup>2</sup>) 212°F (100°C) cure 10,110 psi (711 kg/cm<sup>2</sup>)

#### Heat distortion temperature

When tested in accordance with ASTM D648 typical values obtained will be: 68°F (20°C) cure 113°F (45°C) 212°F (100°C) cure 167°F (75°C)

#### Heat resistance

For many typical applications the material is suitable for continuous immersion in aqueous solutions up to 140°F (60°C) The material will be stable under dry conditions up to 392°F (200°C) and down to -40°F (-40°C).

#### Impact strength

When tested in accordance with	D256
typical values obtained will be:	
ŚŚ°F (20°C) cure	40 J/m
212°F (100°C) cure	58 J/m

# Pump Efficiency Enhancement

The Belzona® 1341 system has been shown to be capable of bringing about an increase in pump efficiency of up to 7% in Independent tests carried out by the National Engineering Laboratory, East Kilbride, Glasgow, Scotland, test number 0230 432/88 BEM/01 and the Aurora Pump Company, North Aurora, Illinois, test number 0789089/1089037.

#### Potable Water Approval

Belzona® 1341 is listed by UK WFBS as suitable for contact with potable water. Satisfies UK Drinking Water Inspectorate (DWI) requirements with regards to Water Supply Regulation 25.1(b)

### 6. SURFACE PREPARATION AND APPLICATION PROCEDURES

For proper technique, refer to the Belzona Instructions For Use leaflet which is enclosed with each packaged product.

#### 7. AVAILABILITY AND COST

Belzona® 1341 is available from a network of Belzona Distributors throughout the world for prompt delivery to the application site. For information, consult the Belzona Distributor in your area.

#### 8. WARRANTY

Belzona guarantees this product will meet the performance claims stated herein when material is stored and used as instructed in the Belzona Instructions For Use leaflet. Belzona further guarantees that all its products are carefully manufactured to ensure the highest quality possible and tested strictly in accordance with universally recognized standards (ASTM, ANSI, BS, DIN, etc.). Since Belzona has no control over the use of the product described herein, no warranty for any application can be given.

# 9. TECHNICAL SERVICES

Complete technical assistance is available and includes fully trained Technical Consultants, technical service personnel and fully staffed research, development and quality control laboratories.

#### **10. HEALTH AND SAFETY**

Prior to using this material, please consult the Material Safety Data Sheet provided with each packaged product.

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**Belzona®1341 - Product Specification Sheet (2)**