# BELZONA 2311 Product Specification Sheet

## 1. PRODUCT NAME

**Belzona® 2311 (SR Elastomer)**
A two-part, rapid-curing elastomeric material for repairing and rebuilding rubber components. Allows repaired component to be put back into service almost immediately. Ideal for emergency and permanent repairs.

## 2. MANUFACTURER

**Belzona Inc.,**
2000 N.W. 88th Court
Miami, Florida 33172

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

## 3. PRODUCT DESCRIPTION

A two component system consisting of a base and solidifier packaged in sealed foil laminated sachets. The material is based on blends of low, medium, and high molecular weight reactive polymers. Once combined, the base and solidifier components rapidly form a tough, but flexible, elastomeric repair compound. As a result rubber components repaired with the product can be put back into service with the minimum of delay.

Applications
Conveyor belts.
Hoses.
Rubber linings.
Rubber rollers.
Off-road tire sidewalls.
Pump impellers.
Pump linings.
Gaskets.
Cables.
Bonding metal to rubber.

## 4. TECHNICAL DATA

Base Component

| | |
|---|---|
| Appearance | Clear to milky white viscous liquid |
| Odor | None |
| Density | 1.10 g/ml. |

Solidifier Component

| | |
|---|---|
| Appearance | Black paste |
| Odor | None |
| Density | 1.16 g/ml. |

Mixing Ratio

| | |
|---|---|
| Mixing Ratio by Weight (Base : Solidifier) | 0.974 : 1 |
| Mixing Ratio by Volume (Base : Solidifier) | 1 : 1 |

Mixed Components

| | |
|---|---|
| Appearance | Black soft paste |
| Odor | None |
| Density | 1.13 g/ml. |

• ***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. At 77°F (25°C) the usable life of mixed material is 2 minutes.

• ***Volume Capacity:***
4.1 cu.in. (66.5 ccs) per 75 gm unit.

• ***Cure Time:***
Allow to solidify for the times shown in the chart below before subjecting it to the conditions indicated.

## 5. PHYSICAL/MECHANICAL PROPERTIES

Determined after 7 days cure at 77°F (25°C).

• ***Abrasion Resistance:***
**Taber**
The Taber abrasion resistance with 1 kg load is typically:

| | |
|---|---|
| H18 Wheels (Wet) at 70°F (21°C) loss per 1000 cycles | 45 mm³ |
| H18 Wheels (Dry) at 70°F (21°C) loss per 1000 cycles | 109 mm³ |

• ***Adhesion:***
Typical adhesion values achieved when the material is used in conjunction with the designated surface conditions are:

| | |
|---|---|
| Mild steel | ASTM D429 119 pli |
| Natural rubber | ASTM D413 14 pli* |
| Styrene-butadiene | ASTM D413 14 pli* |

** Cohesive failure in the substrate material*

**CURE TIMES**

| TEMPERATURE | 41°F (5°C) | 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 or immersion | 60 min | 40 min | 30 min | 25 min | 20 min | 15 min |
| Full mechanical or thermal loading | 4 hrs | 2 hrs | 1½ hrs | 1 hr | 50 min | 40 min |
| Immersion in chemicals | 2 days | 1½ days | 1 day | 18 hrs | 15 hrs | 12 hrs |



Publication No. 142-3-11

• ***Chemical Resistance:***
Once fully cured, the material will demonstrate excellent resistance to the following chemicals;

carbonic acid
15% hydrochloric acid
10% hydrofluoric acid
20% sulfuric acid
stearic acid
tartaric acid
10% ammonia solution
barium hydroxide
calcium hydroxide
lime water
magnesium hydroxide
25% potassium hydroxide
25% sodium hydroxide
grease
mercury
oil/water mixture
emulsion paint
distilled water
sea water
wax emulsion
fertilizer solution
starch
silicone oil
inorganic salts

** For a more detailed description of chemical resistance properties, refer to Product Data E507.*

• ***Compression Set:***
When tested in accordance with BS 903 Part A6 typical compression set is 13%.

• ***Electrical Properties:***
**Dielectric Strength**
Tested to ASTM D149 is typically 300 volts/mil (12,000 volts/mm).

• ***Elongation:***
Tested in accordance with ASTM D412 (Die C) is typically 450%.

• ***Heat Resistance:***
For many typical applications the product is suitable for operation in the temperature range -40°F to 150°F (-40°C to 65°C).

• ***Sag Resistance:***
Material shows no signs of slump at ¼ inch (6 mm). Very slight at ½ inch (12 mm).

• ***Shore A Hardness:***
Tested in accordance with ASTM D2240 is 75.

• ***Tear Strength:***
Tested in accordance with ASTM D624 is typically 260 pli.

• ***Tensile Strength:***
Tested in accordance with ASTM D412 (Die C) is typically 1400 psi.

## 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® 2311** 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 recognised 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 relevant Material Safety Data Sheets.

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*EMS 509612*

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Printed in England Publication No. 142-3-11