**S7478 Potting Compound**

The Epic S7478 is a two component polyurethane potting compound for use in high temperature applications. The Epic S7478 is UL94 V-0 recognized in a thin cross section without the use of halogen flame retardants. The Epic S7478 has user friendly features such as:

- Mid Range Hardness of Shore A 75 – 80
- Low Mixed Viscosity for Superior Flow
- Excellent Thermal Conductivity Properties
- 140˚C UL RTI Recognition
- Short Gel Time for Fast Production
- Excellent Moisture Resistance
- Used in Outdoor and Other Harsh Environments

The S7478 material is a premium potting compound designed for the following applications:

- LED Drivers That Must Meet the Requirements of UL 8750 Safety Standard for LED Equipment for Use in Lighting Products
- Electrical Encapsulation
- Signals and Indicators
- Signs
- Automotive Assemblies
- Decorative LED Lights

Epic Resins offers distinct advantages over our competitors:

- ISO 9001 and 14001 Recognized Management System
- Extensive Customer Support
- New Product Development
- Product Customization
- Application Property Testing
- Local Field Technical Service – No Need to Work Through Distributors
### General Properties

**Identification**
Polyurethane Potting Compound

**Component Count**
2

**Color Part A**
Black

**Color Part B**
Clear

**Color Mixed**
Black

**Flammability (UL)**
Recognized V-0 @ 3.0 mm

**UL File Number**
E55516 Plastics Component

**Shelf Life @ 25°C**
6 months

### UL Approvals

**HAI (UL 746)**
0 @ 3.0 mm

**CTI (UL 746)**
0 @ 3.0 mm

**HWI (UL 746)**
0 @ 3.0 mm

**RTI (UL 746B)**
140˚C

### Material Properties

**Mix Ratio by Weight**
100:8.52

**Viscosity, Part A (ASTM D2393)**
15,000 – 20,000 cps @ 25˚C, 20 RPM

**Viscosity, Part B (ASTM D4287)**
250 – 450 cps @ 25˚C, 700 RPM

**Viscosity, Mixed (ASTM D2393)**
5,000 – 7,000 cps @ 25˚C, 20 RPM

**Weight/Gallon (ASTM D1875)**
Part A: 12.60 – 12.80 lb/gal

**Part B: 8.90 – 9.10 lb/gal**

**Mixed: 12.20 – 12.40 lb/gal**

### Mixed Properties

**Gel Time (ASTM D3056)**
25 – 35 minutes @ 25˚C, 100 Grams

**Cure Schedule**
2 – 3 hours @ 65˚C

### Cured Properties

**Hardness (ASTM D2240)**
75 – 80 Shore A

**Tg (ASTM E5136)**
(-5˚C) – (-10˚C)

**Water Absorption (ASTM D570)**
0.42 – 0.44% After 24 Hours

**Coeff Therm Exp (ASTM E331)**
175 – 200 (EXP-6) in/in °C (20˚C – 60˚C)

**Coeff Therm Exp (ASTM E831)**
100 – 130 (EXP-6) in/in °C (-40˚C – -20˚C)

**Weight Change**
(-1%) – (-1.5%) For 7 Days @ 150˚C

**Thermal Conductivity**
0.76 – 0.77 W/mK (ET-164)

5.3 – 5.4 BTU in/hr ft² °F (ET-164)

17.9 – 18.1 (EXP-4) Cal Cm/Sec Cm² °C (ET-164)

### Electrical Properties

**Dielectric Constant (ASTM D150)**
4.98 – 5.18 100 Hz 122 mils

4.97 – 5.19 120 Hz 122 mils

4.83 – 5.02 1 kHz 122 mils

4.61 – 4.79 10 kHz 122 mils

4 – 4.3 100 kHz 122 mils

**Dielectric Strength (ASTM D149)**
440 – 460 Volts/mil (0.1 inch)

**Dissipation Factor (ASTM D150)**
0.0262 – 0.0284 100 Hz 122 mils

0.0243 – 0.0257 120 Hz 122 mils

0.026 – 0.027 1 kHz 122 mils

0.047 – 0.049 10 kHz 122 mils

0.04 – 0.07 100 kHz 122 mils

**Surface Resistivity (ASTM D257)**
6.00e+12 – 8.00e+12 ohms

**Volume Resistivity (ASTM D257)**
1.50e+12 – 2.00e+12 ohm cm

### Mixing Instructions

When mixing two component polyurethanes, the ideal method is to mix by weight using a balance or digital scale. The mixing container should be placed on the scale and set to read zero, the appropriate amount of resin should be weighed followed by the appropriate amount of hardener. The material should then be stirred, ideally with a metal spatula, ensuring that the material is thoroughly mixed to a homogenous state by scraping the sides, bottom and the area where the sides meet the bottom of the container. Failure to do so can result in uncured sections of material or altered properties of the cured material. When mixing polyurethanes, precautions should be taken to prevent any moisture from contaminating the material.

### Storage and Handling

Please refer to the Material Safety Data Sheet when determining the proper precautions to be used when storing or handling Epic S7478. This product contains Dicyclohexylmethane-4,4’-Disocyanate, which is a potent skin sensitizer and a respiratory sensitizer. Other health problems may be aggravated by exposure to this material. Great care should be taken to ensure employees are not exposed to this material above the ACGIH TLV. Epic Resins recommends that engineering controls be used to minimize employee exposure to this or any other industrial chemical.

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