

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:

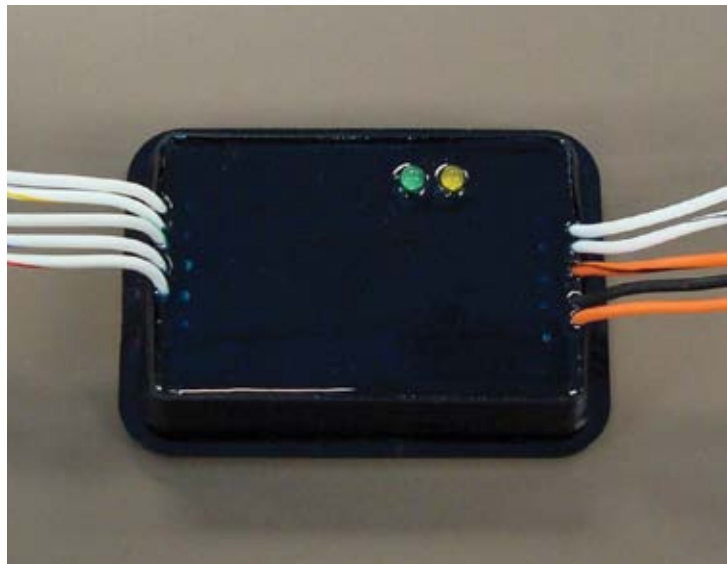
- Mid Range Hardness of Shore A 75 – 80
- Low Mixed Viscosity for Superior Flow
- Excellent Thermal Conductivity Properties
- 140°C UL RTI Recognition
- Short Gel Time for Fast Production
- Excellent Moisture Resistance
- Used in Outdoor and Other Harsh Environments

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
Mix Ratio by Volume	100:12
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
T _g (ASTM E1356)	(-5°C) – (-10°C)
Water Absorption (ASTM D570)	0.42 – 0.44% After 24 Hours 1.87 – 1.99% After 168 Hours
Coeff Therm Exp (ASTM E831)	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 ft ² °F (ET-164)
17.9 – 18.1 (EXP-4) Cal Cm/Sec Cm ² °C (ET-164)

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. This includes mixing under an inert gas purge such as argon or nitrogen, the inert gas will blanket the material since it is more dense than air. The use of wood stir sticks and paper cups should be avoided due to their porosity and ability to hold moisture. When reclosing partial containers, an inert gas purge should again be introduced to prevent moisture contamination.

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'-Diisocyanate, 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.

LIMITATION OF WARRANTY: Epic warrants its Product to be free of defects in materials and workmanship and to conform with all product specifications. Epic's liability is limited to replacement product only. Epic shall not be liable to Customer or any other party for any incidental, consequential or special damages, or any lost profits which may be incurred by Customer or any other party. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. NO EMPLOYEE, AGENT OR REPRESENTATIVE OF EPIC IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY.

Tensile Strength (ASTM D638 or D412)

-40°C	2549 – 2975 PSI
0°C	377 – 463 PSI
25°C	294-328 PSI
105°C	115 – 157 PSI

Elongation (ASTM D638 or D412)

-40°C	24 – 36%
0°C	67 – 91%
25°C	44 – 58%
105°C	27 – 31%

Tensile Modulus (ASTM D638 or D412)

-40°C	27,370 – 31,810 PSI
0°C	1,323 – 1,703 PSI
25°C	991 – 1,139 PSI
105°C	1,105 – 1,473 PSI

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

EPIC RESINS

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