

TECHNICAL DATA SHEET



S7485 SERIES POTTING COMPOUND

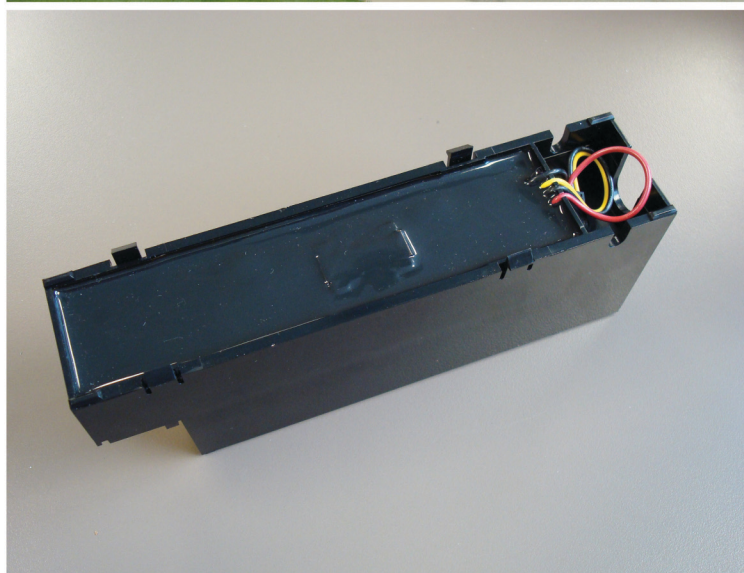
The S7485 is a 2 component high performance electrical potting compound. This is an excellent material for the encapsulation of sensitive electronic components that experience rigorous operating conditions. The S7485 material has many application friendly features such as:

- Low mixed viscosity @ 50 °C for superior flow
- Short gel time for quick production
- Excellent Thermal Conductivity properties
- MMD equipment friendly
- Low weight loss at 150 °C
- Good adhesion to many substrates
- Excellent moisture resistance
- Mid range hardness of Shore A 85 – 90
- Outstanding electrical properties

The S7485 material is a premium potting compound designed for the following applications:

- Potting of heavy duty motors
- Electrical potting
- Controller module potting
- Sensitive electronics in the Renewable energy market
- Relay and sensor potting

S7485 material is a cost effective potting compound suitable for a variety of potting applications. This material is an excellent candidate for applications that need to draw heat away from power electronics.



GENERAL PROPERTIES

Identification	Polyurethane Potting Compound
Component Count	2
Color Part A	Grey
Color Part B	Clear
Color Mixed	Grey
Shelf Life @ 25C	6 months
Filler Stability Part A	Good
Filler Stability Part B	Unfilled

MATERIAL PROPERTIES

Mix Ratio by Weight	100:5.7
Mix Ratio by Volume	100:14
Viscosity @ 25 °C	Part A: 20 RPM : 90,000 – 120,000 CPS Part B: 800 RPM : 20 – 30 CPS Mixed: 20 RPM : 30,000 – 35,000 CPS Mixed: @ 50 °C : 7,000 – 9,000 CPS
Weight Per Gallon	Part A: 21.23 – 21.53 lb/gal Part B: 8.90 – 9.00 lb/gal Mixed: 19.72 – 19.99 lb/gal

MIXED PROPERTIES

Gel Time <small>ASTM D3056 (100 Grams)</small>	5 – 15 minutes @ 25 °C
Pot Life <small>(100 Grams)</small>	2 – 4 minutes @ 25 °C
Cure Schedule, Hours	12 – 24 hours @ 25 °C

CURED PROPERTIES

Weight Change	-0.2 – -0.3% After 14 days @ 150 °C
Water Absorption <small>(ASTM D570)</small>	0.037% by wt. @ 24 hours 0.082% by wt. @ 168 hours

MIXING INSTRUCTIONS

Before mixing Part A with Part B ensure that the Part A is completely homogenous and does NOT display any separation or settling. When hand 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. It is important to note that polyurethane materials must be weighed as close to exact as possible with a +/- 2% margin of error. The material should then be stirred, ideally with a metal spatula, ensuring that the material is thoroughly mixed to a homogenous state (approximately 45 – 60 seconds) 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. It may be necessary to remove/or evacuate any excess air in the material that was caused by mixing. This can be done by pulling a vacuum on the material. The material should be in a container 3 – 5 times larger than the height of the liquid. When mixing polyurethanes, precautions should be taken to prevent any moisture from contaminating the material. 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 (argon or nitrogen) of the container should be used to prevent moisture contamination.

STORAGE AND HANDLING

All polyurethanes are moisture sensitive by nature and proper precautions need to be taken to ensure proper handling and storage. All containers should be purged to displace room air with dry Argon or dry nitrogen. Doing this ensures that most moisture filled air is no longer in the container. All containers should be stored indoors as close to 25 °C as possible. Please refer to the Material Safety Data Sheet when determining the proper precautions to be used when storing or handling Epic S7485. Epic Resins recommends that engineering controls be used to minimize employee exposure to this or any other industrial chemical.

Hardness ASTM D2240

Shore A 85 – 90

Tg (ASTM D3056) -23 °C

Thermal Conductivity (ASTM D2214)

1.6 – 2 W/mK <small>(ASTM E1225)</small>
11.09 – 13.86 BTU in/hr ft² F <small>(ASTM D2214)</small>
37.7 – 47.1 (EXP-4) Cal Cm/ Sec Cm² °C <small>(ASTM D2214)</small>

Coeff Therm Exp. (ASTM D696) 120.6 (EXP-6) cm/cm °C

ELECTRICAL PROPERTIES

Dielectric Strength (ASTM D149) 386 Volts/mil (minimum)
@ 118 Mils

Dielectric Constant (ASTM D150)

5.6 – 5.8	100 Hz	118 mils
5.1 – 5.3	1 kHz	118 mils
4.7 – 5	10 kHz	118 mils
4.24 – 4.78	100 kHz	118 mils

Dissipation Factor (ASTM D150)

0.04 – 0.06	100 Hz	118 mils
0.04 – 0.06	1 kHz	118 mils
0.03 – 0.05	10 kHz	118 mils
0.022 – 0.026	100 kHz	118 mils

Volume Resistivity (ASTM D257)

1.78e + 14 – 2.47e+14 ohm
cm @ 118 Mils

EPIC RESINS

600 Industrial Blvd | Palmyra, WI 53156 | Toll Free: (800) 242-6649 | Phone: (262) 495-3400
Website: www.epicresins.com | E-mail: sales@epicresins.com