

Thermoset UR-325 Urethane Encapsulant

Description

LORD Thermoset UR-325 encapsulant is a two-component urethane system designed for encapsulating delicate, pressure or shock sensitive electronic components. Thermoset UR-325 encapsulant cures to a low modulus material using room temperature cure.

Features and Benefits

Good Adhesion – provides good adhesion to a variety of materials.

Broad Temperature Range – can be used on parts and devices that experience operating temperatures from -90°C to +130°C.

Environmentally Resistant – provides excellent thermal shock resistance; exhibits exceptional hydrolytic stability.

Application

Mixing – Thoroughly stir each component prior to mixing together. Mix Thermoset UR-325 resin with Thermoset UR-325 hardener at a 4:1 ratio, by weight. Automatic meter/mix/dispense equipment may be used for high volume production.

Applying – Apply urethane encapsulant using handheld cartridges or automatic meter/mix/dispense equipment.

Curing – Allow encapsulant to initially cure for 24 hours at 25°C. Depending on temperature of initial cure, complete cure will be achieved in 3-4 days at 25°C.

Shelf Life/Storage

Shelf life is six months for Thermoset UR-325 resin and one year for Thermoset UR-325 hardener from date of manufacture when stored in a dry environment at 25°C in original, unopened container.

After opening, protect each component from excessive moisture by using dry nitrogen as an inert cover.

If stored or shipped at cooler temperatures, Thermoset UR-325 hardener may crystallize. If crystals appear, gently warm hardener at 32-46°C and periodically stir as it is liquefying. Heating period should not exceed three hours as excessive heating will cause dimerization.

Typical Properties*

	UR-325 Resin	UR-325 Hardener	Mixed
Appearance	Black Liquid	Amber Liquid	Black Liquid
Viscosity, cps @ 25°C	–	–	4000
Specific Gravity	–	–	0.98
Working Life, min @ 25°C	–	–	20-25

*Data is typical and not to be used for specification purposes.

LORD TECHNICAL DATA

Typical Cured Properties**

Volume Resistivity, ohm-cm @ 25°C ASTM D 257	3 x 10 ¹⁵
Thermal Conductivity, W/mK	0.2
Coefficient of Linear Thermal Expansion, ppm/°C ASTM D 3386	240 x 10 ⁻⁶
Glass Transition Temperature (Tg), °C	-76
Hardness Shore A, ASTM D 2240	60
Tensile Strength, psi ASTM D 638	770
Elongation at Break, % ASTM D 638	225
Dielectric Strength, V/mil @ 25°C	650
Dielectric Constant @ 25°C 1 MHz, ASTM D 150	2.9
Dissipation Factor @ 25°C 1 MHz, ASTM D 150	0.028

** Data is typical and not to be used for specification purposes.
Cure schedule of 16 hours at 25°C plus 2 hours at 100°C.

Cautionary Information

Before using this or any LORD product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Values stated in this technical data sheet represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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