

LORD® UR-355 Urethane Encapsulant

Description

LORD® UR-355 urethane encapsulant is a two-component system designed for encapsulation of fragile, pressure sensitive microelectronic components. LORD UR-355 encapsulant cures to a soft, flexible gel using either room temperature or heat cure.

Features and Benefits

Low Stress – exhibits low shrinkage and stress on components as it cures.

Low Viscosity – maintains low viscosity for complete and void-free encapsulation.

Excellent Adhesion – provides excellent pressure-sensitive adhesion to most substrates.

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

Board Temperature Range – can be used on parts and devices that experience operating temperatures from -80 to +130°C.

Application

Mixing – Thoroughly stir each component prior to mixing together. Mix LORD UR-355 A resin with LORD UR-355 B hardener at a 100:53.2 ratio, by weight (2:1, by volume). 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 cure for 4 hours at 25°C, or for 1 hour at 85°C. This time-at-temperature profile refers to the time the material should be allowed to cure once it reaches the target temperature. Allowance should be made for oven ramp rates, parts with large thermal mass and other circumstances that may delay material actually reaching the target temperature.

Typical Properties*

	UR-355 A Resin	UR-355 B Hardener	Mixed
Appearance	Clear Liquid	Clear Amber Liquid	Clear Paste
Viscosity, cps @ 25°C	3750	75	1500
Specific Gravity	0.91	0.98	0.94
Gel Time, min @ 25°C	–	–	15
Working Life, min @ 25°C	–	–	10

*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	1.15 x 10 ¹⁶
Hardness	Tough Gel
Tensile Strength, MPa	0.69
Elongation at Break, % ASTM D 638	<250
Moisture Absorption, % @ 25°C ASTM D 570	0.29
Dielectric Constant @ 25°C 1 MHz, ASTM D 150	3.58
Dissipation Factor @ 25°C 1 MHz, ASTM D 150	0.032
Extractable Ionic Contaminants, ppm	
Chloride	2.6
Sodium	<1
Potassium	<1

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Shelf Life/Storage

Shelf life of each component is six months from date of manufacture when stored at 25°C in original, unopened container.

If stored or shipped at cooler temperatures, LORD UR-355 hardener may crystallize. If crystals appear, gently warm hardener at 50-60°C to melt crystals before mixing with resin.

Cautionary Information

Before using this or any LORD product, refer to the Material Safety Data Sheet (MSDS) 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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