Master Bond UV15LV One Component, UV Curable Epoxy Based System

Category : Polymer , Thermoset , Epoxy , Epoxy Encapsulant, Unreinforced

Material Notes:

Product Description: Master Bond UV15LV is a high strength, low viscosity, epoxy based UV curable system for bonding, sealing and coating. It has low viscosity and it is widely used in a variety of applications where spin coating is required. It is also completely free of any oxygen inhibition. UV15LV will cure quickly and easily when exposed to a UV light source with a wavelength range between 320-365 nm, with the optimum at 365 nm. The energy required is typically 20-40 milliwatts per cm^2. The rate of cure depends upon the distance of the light from the material being cured, the thickness of the section and the intensity of the light source. It typically cures in thicknesses of a micron or less up to 0.001-0.015 inches in 15-30 seconds or less. Epoxy based UVs are described as having a “cationic” curing reaction. This kind of system will have lower shrinkage (1-2%) and higher temperature resistance than the majority of UV systems that cure by a “free radical" mechanism. UV15LV has excellent resistance to a wide variety of chemicals including water, acids, bases, fuels and many solvents. It features good physical strength characteristics and electrical insulation properties. UV15LV has great adhesion to a wide variety of substrates including plastics, glass and many metals. As is typical with UVs, it has excellent optical clarity and light transmission properties. Cationic systems, such as UV15LV, tend to have much higher temperature resistance than other UV type systems. Its glass transition temperature (Tg) with a straight UV cure is about 85°C and when post cured for 30 minutes at 125°C, the Tg is about 120° C. This post cure also enhances UV15LV's chemical resistance. The service temperature range for this system is -80°F to +300°F. It is widely used for a variety of applications in the optical, optoelectronic, aerospace and related industries. Product Advantages: One component system; no mixing needed. Very low viscosity, easily applied; ideal for spin coating. No oxygen inhibition while curing. Cationic curing system. Superior temperature resistance, especially when post cured with heat. Outstanding optical clarity; excellent light transmission. High bond strength; excellent adhesion to surface treated metals, glass and many plastics.Information provided by MasterBond®

Order this product through the following link:
http://www.lookpolymers.com/polymer_Master-Bond-UV15LV-One-Component-UV-Curable-Epoxy-Based-System.php

Physical Properties	Metric	English	Comments
Viscosity	70 - 120 cP	70 - 120 cP	

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	>= 75	>= 75	
Tensile Strength at Break	>= 34.5 MPa @Temperature 23.9 °C	>= 5000 psi @Temperature 75.0 °F	
Tensile Modulus	>= 1.72 GPa @Temperature 23.9 °C	>= 250 ksi @Temperature 75.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear	55.0 - 60.0 µm/m-°C	30.6 - 33.3 µin/in-°F	
Maximum Service Temperature, Air	149 °C	300 °F	

Thermal Properties	Metric	English	Comments
Minimum Service Temperature, Air	-62.2 °C	-80.0 °F	
Glass Transition Temp, Tg	85.0 °C	185 °F	without post cure
	120 °C	248 °F	with post cure
Shrinkage	1.0 - 2.0 %	1.0 - 2.0 %	

Optical Properties	Metric	English	Comments
Refractive Index	1.517	1.517	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+14 ohm-cm	>= 1.00e+14 ohm-cm	
Dielectric Constant	3.25 @Frequency 60.0 Hz, Temperature 25.0 °C	3.25 @Frequency 60.0 Hz, Temperature 77.0 °F	
Dissipation Factor	0.020 @Frequency 60.0 Hz, Temperature 25.0 °C	0.020 @Frequency 60.0 Hz, Temperature 77.0 °F	

Processing Properties	Metric	English	Comments
Shelf Life	6.00 Month @Temperature 23.9 °C	6.00 Month @Temperature 75.0 °F	in original unopened containers with no exposure to light

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