

HumiSeal UV40™ UV Curable Conformal Coating

Technical Data Sheet

HumiSeal UV40™ is a single component, high solids, UV curable, acrylated polyurethane conformal coating that possesses excellent chemical resistance, surface hardness, flexibility and moisture resistance. The material is tack-free after exposure to UV light. A secondary moisture cure mechanism will cure unexposed areas of the coating within 2-3 days at ambient conditions. The coating fluoresces under UV light to allow for coating inspection and can be applied by selective coating equipment. HumiSeal UV40™ coating is recognized under UL File Number E105698, MIL-I-46058C qualified, and IPC-CC-830 and RoHS Directive 2002/95/EC compliant.

Typical Properties of HumiSeal UV40™

Density	1.06 g/cm ³
Solids Content	100%
Viscosity, centipoise per Fed-Std-141, Meth. 4287	500 - 800
Recommended Coating Thickness, microns	25 - 125
Recommended UV Dose*	1-4 J/cm ²
Shelf Life at Room Temperature, DOM	12 months
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 125°C
Glass Transition Temperature - DSC	45°C
Coefficient of Thermal Expansion - TMA	85 ppm/°C Below T _g 197 ppm/°C Above T _g
Modulus - DMA	10364 MPa @ -40°C 4283 MPa @ 25°C 66 MPa @ 80°C
Flammability, per UL-94	V-0
Dielectric Withstand Voltage, volts per MIL-I-46058C	>7,500
Dielectric Constant, at 1MHz and 25°C per ASTM-D150-65T	2.5
Dissipation Factor, at 1MHz and 25°C per ASTM-D150-65T	0.01
Insulation Resistance, ohms per MIL-I-46058C	8.0 x 10 ¹⁴ (800T)
Moisture Insulation Resistance, ohms per MIL-I-46058C	6.0 x 10 ¹⁰ (60G)
Fungus Resistance, per ASTM-G21	Pass
Resistance to Chemicals	Excellent
Recommended Stripper	HumiSeal Stripper 1072

*Fusion "H" style bulb recommended

Application of HumiSeal UV40™

Cleanliness of the substrate is of extreme importance for the successful application of a conformal coating. Surfaces must be free of moisture, dirt, wax, grease, flux residues and all other contaminants. Contamination under the coating could cause problems that may lead to assembly failures.

Spraying

HumiSeal UV40™ can be applied via standard selective coating equipment or by conventional hand spray equipment. The source air used for spraying must be dry (a dry inert gas is highly recommended) to prevent premature curing of the secondary cure mechanism. The spraying should be done with adequate ventilation so that the vapour and mist are carried away from the operator.

Brushing

HumiSeal UV40™ may be applied by brush for rework or touch up only. Brush must be cleaned with solvent promptly after use.

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Clean Up

To flush equipment and clean uncured HumiSeal UV40™, non-alcohol based solvents should be used. HumiSeal Thinner 600 is recommended.

Rework

HumiSeal UV40™ is a highly cross linked UV cured coating. The cured film has a high degree of environmental and chemical resistance and will be more difficult to remove than traditional conformal coatings. Thermal displacement and mechanical abrasion are suitable options for rework of HumiSeal UV40™.

Storage

HumiSeal UV40™ is photosensitive. The product should not be exposed to direct sunlight or full spectrum fluorescent lighting. HumiSeal UV40™ should be stored at 0 to 35°C, away from excessive heat, in tightly closed opaque containers. Prior to use, allow the product to equilibrate for 24 hours at room temperature. HumiSeal UV40™ is a moisture curing material and care should be taken to protect process vessels and partial containers from moisture. Partial containers must be purged with a dry, inert gas such as dry air, nitrogen or argon before closure, otherwise premature polymerization by atmospheric moisture will occur.

Caution

Use only in well-ventilated areas to avoid inhalation of vapours or spray. Avoid contact with skin and eyes. Consult MSDS prior to use.

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