HumiSeal 1B73LOC™ Acrylic Conformal Coating Technical Data Sheet

HumiSeal 1B73LOC™ is a low VOC solvent based conformal coating that complies with most North American air quality regulations. HumiSeal 1B73LOC™ is a fast drying, single component, acrylic coating intended for printed circuit assemblies. Cured HumiSeal 1B73LOC™ fluoresces under UV light for ease of inspection and is easily repaired. HumiSeal 1B73LOC™ coating is MIL-I-46058C qualified, IPC-CC-830 and RoHS Directive 2002/95/EC compliant and recognized under UL File Number E105698.

Properties HumiSeal 1B73LOC™

Density, g/cm³ per ASTM, Meth. D1475	1.23 ± .03
Solids Content, % by weight per Fed-Std-141, Meth. 4044	26 ± 2
Viscosity, centipoise per Fed-Std-141, Meth. 4287	445 ± 30
VOC, grams/litre	92
Drying Time to Handle per Fed-Std-141, Meth. 4061	25 minutes
Recommend Coating Thickness, microns	25 - 75
Recommended Curing Conditions	24 hrs @ RT or 2 hrs @ 76°C
Time Required to Reach Optimum Properties	7 days
Recommended Thinner	HumiSeal Thinner 701
Recommended Stripper	HumiSeal Stripper 1080
Shelf Life at Room Temperature, DOM	24 months
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 125°C
Coefficient of Thermal Expansion - TMA	67 ppm/°C
Glass Transition Temperature - DSC	42°C
Modulus - DMA	11.1 MPa
Flammability, per UL 94	V-0
Dielectric Withstand Voltage, volts per MIL-I-46058C	>1,500
Dielectric Breakdown Voltage, volts per ASTM, Meth. D149	6300
Dielectric Constant, at 1MHz and 25^{0}C per ASTM-D150-65T	2.6
Dissipation Factor, at 1MHz and 25^{0}C per ASTM-D150-65T	0.01
Insulation Resistance, ohms per MIL-I-46058C	550 x 10^{12} (550T)
Moisture Insulation Resistance, ohms per MIL-I-46058C	70 x 10^9 (70G)
Fungus Resistance, per ASTM-G21	Passes

Application HumiSeal 1B73LOC™

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.

Dipping

Depending on the complexity, density and configuration of components on the assembly, it may be necessary to reduce the viscosity of HumiSeal 1B73LOC™ with HumiSeal Thinner 701 in order to obtain a uniform film. Once optimum viscosity is determined, a controlled rate of immersion and withdrawal (5-15 cm/min) will further ensure even deposition of the coating and ultimately a uniform film. During the application, evaporation of solvent causes an increase in viscosity that should be adjusted by adding small amounts of HumiSeal Thinner 701. Viscosity in the dip tank should be checked regularly, using a simple measuring device such as a Zahn or Ford viscosity cup.

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Spraying

HumiSeal 1B73LOC™ can be sprayed using conventional spraying equipment. Spraying should be done in an environment with adequate ventilation so that the vapour and mist are carried away from the operator. The addition of HumiSeal Thinner 701 is necessary to ensure a uniform spray pattern resulting in pinhole-free film. The amount of thinner and spray pressure will depend on the specific type of spray equipment used and operator technique.

Brushing

HumiSeal 1B73LOC™ may be brushed with a small addition of HumiSeal Thinner 701. Uniformity of the film depends on component density and operator's technique.

Storage

HumiSeal 1B73LOC™ should be stored away from excessive heat or cold, in tightly closed containers. HumiSeal products may be stored at temperatures of -18 to 38°C. Prior to use, allow the product to equilibrate for 24 hours at a room temperature of 18 to 32°C.

Caution

The solvents in HumiSeal 1B73LOC™ are flammable. Material should not be used in presence of open flame or sparks. 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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