

# HumiSeal<sup>®</sup> 1B73EPA Acrylic Conformal Coating

## Technical Data Sheet

HumiSeal<sup>®</sup> 1B73EPA is a fast drying, single component, acrylic conformal coating intended for use on printed circuit assemblies. . HumiSeal<sup>®</sup> 1B73EPA is also produced as pre-blended products, at a range of viscosities, suitable for a variety of applications. HumiSeal<sup>®</sup> 1B73EPA, and its Pre-Blends, demonstrate excellent flexibility, fluoresce under UV light for ease of inspection and are easily repaired. HumiSeal<sup>®</sup> 1B73EPA coating is MIL-I-46058C qualified, IPC-CC-830, RoHS Directive 2002/95/EC and EPA 33/50 compliant, and recognized under UL File Number E105698. After complete cure, the properties of HumiSeal<sup>®</sup> 1B73EPA Pre-blends and HumiSeal<sup>®</sup> 1B73EPA are comparable.

### Properties Specific to HumiSeal<sup>®</sup> 1B73EPA Pre-blended Products as Supplied

Product	Viscosity	Solids	Density	VOC
1B73 EPA	200-260	20-26	0.96 ± 0.03	739.0
1B73 EPA PB 54 CPS	51-57	16-18	0.94 ± 0.03	780.2
1B73 EPA/600 PB 65 CPS	62-68	18-20	0.96 ± 0.03	777.6

### Properties of HumiSeal<sup>®</sup> 1B73EPA

Density, per ASTM D1475	0.96 ± 0.03 g/cm <sup>3</sup>
Solids Content, % by weight per Fed-Std-141, Meth. 4044	23 ± 3 %
Viscosity, per Fed-Std-141, Meth. 4287	230 ± 30 centipoise
VOC	739 grams/litre
Drying Time to Handle per Fed-Std-141, Meth. 4061	30 minutes
Recommended Coating Thickness	25 - 75 microns
Recommended Curing Conditions	24 hrs @ RT or 60 min. @ 76°C
Time Required to Reach Optimum Properties	7 days
Recommended Thinner	HumiSeal <sup>®</sup> Thinner 600
Recommended Stripper	HumiSeal <sup>®</sup> Stripper 1080EU
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, per MIL-I-46058C	>1500 volts
Dielectric Breakdown Voltage, per ASTM D149	6300 volts
Dielectric Constant, at 1MHz and 25°C, per ASTM D150-98	2.6
Dissipation Factor, at 1MHz and 25°C, per ASTM D150-98	0.01
Insulation Resistance, per MIL-I-46058C	5.5 x 10 <sup>12</sup> ohms (550TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	7.0 x 10 <sup>10</sup> ohms (70GΩ)
Fungus Resistance, per ASTM G21	Passes

## Application of HumiSeal<sup>®</sup> 1B73EPA Pre-blended Products

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.

HumiSeal<sup>®</sup> 1B73EPA Pre-Blends are specifically diluted to a viscosity for immediate use. No additional dilution is required. Customers should establish which pre-blend is suitable for their equipment and application method before commercial use. HumiSeal<sup>®</sup> Technical Support should be contacted if any further advice on pre-blends and equipment is required.

### Dipping

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<sup>®</sup> Thinner 600. Viscosity in the dip tank should be checked regularly, using a simple measuring device such as a Zahn or Ford viscosity cup.

### Spraying

HumiSeal<sup>®</sup> 1B73EPA pre-blends are available which 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 specific pre-blend used and the pressure applied will depend on the specific type of spray equipment used and operator technique.

### Brushing

HumiSeal<sup>®</sup> 1B73EPA Pre-Blends are available which may be brushed onto surfaces. Uniformity of the film depends on specific pre-blend chosen and operator's technique.

### Storage

HumiSeal<sup>®</sup> 1B73EPA and Pre-Blends should be stored away from excessive heat or cold, in tightly closed containers. HumiSeal<sup>®</sup> products may be stored at temperatures of 0 to 35°C. Prior to use, allow the product to equilibrate for 24 hours at a room temperature of 18 to 32°C.

### Caution

Application of HumiSeal<sup>®</sup> Conformal Coatings should be carried out in accordance with local and National Health and Safety regulations. The solvents in HumiSeal<sup>®</sup> Conformal Coatings 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/SDS prior to use.

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