

HumiSeal[®] 1B73 Pre-blend Acrylic Conformal Coatings Technical Data Sheet

HumiSeal[®] 1B73 is a single component, fast drying, acrylic conformal coating intended for use on printed circuit assemblies. HumiSeal[®] 1B73 is also produced as pre-blended products, at a range of viscosities, suitable for a variety of application methods without further dilution. After complete cure, the properties of HumiSeal[®] 1B73 Pre-blends and HumiSeal[®] 1B73 are comparable.

HumiSeal[®] 1B73 coating has the following advantages:

- Demonstrates excellent flexibility
- Protection against moisture and dirt
- Fluoresces under UV for ease of inspection and is easily repaired.
- Meets the requirements of MIL-I-46058C
- Meets the requirements of IPC-CC-830
- Meets the requirements of IEC61086 and IEC60664-3
- Recognized under UL File Number E105698
- Compliant to REACH and RoHS Directive EU 2015/863
- Range of Pre-blends and thinners available for different application methods

Typical Properties of HumiSeal[®] 1B73 Pre-blend Products as Liquid Coating

Product	Viscosity (cPs)	Solids (%)	Density (g/cm ³)	VOC (g/L)	Shelf Life (DOM, months)
1B73	250 ± 20	29.5 ± 2	0.92 ± 0.02	661.0	24
1B73 PB 23 CPS	23 ± 5	15 ± 1	0.90 ± 0.02	765.0	12
1B73 PB 38 CPS	38 ± 5	19.5 ± 1.5	0.91 ± 0.03	728.0	12
1B73 PB 55 CPS	55 ± 5	21 ± 1.5	0.91 ± 0.03	718.9	12
1B73 PB 65 CPS	65 ± 5	22 ± 2	0.91 ± 0.02	713.7	18
1B73/73 PB 25CPS	25 ± 5	15.5 ± 1	0.91 ± 0.02	769.0	12
1B73/521 PB 25 CPS	25 ± 5	15 ± 1	0.90 ± 0.02	760.0	24
1B73/521 PB 65 CPS	65 ± 5	21 ± 1	0.91 ± 0.02	719.0	24
1B73/730EU PB55	55 ± 5	18.5 ± 1.5	0.94 ± 0.02	741.7	12
1B73/730EU PB80	80 ± 5	20.5 ± 1.5	0.93 ± 0.02	739.4	12

Drying Time to Handle per Fed-Std-141, Meth. 4061

30 minutes

* Other Coating to Thinner combinations may be successful. Please refer to the HumiSeal Coating to Thinner Compatibility Matrix for guidance on compatibility for dipping, brushing, spraying and cleaning. Consult HumiSeal prior to testing new thinner combinations.

Typical Properties of HumiSeal[®] 1B73 and its Pre-blend Products as Cured Coating

Recommended Coating Thickness	25 - 75 microns
Recommended Curing Conditions	24 hrs @ RT or 2 hrs @ 76°C
Time Required to Reach Optimum Properties	7 days
Recommended Stripper	HumiSeal [®] Stripper 1080
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 22°C, per ASTM D150-22	2.73
Dielectric Constant, at 1GHz and 22°C, per ASTM D150-22	2.26
Dissipation Factor, at 1MHz and 22°C, per ASTM D150-22	0.171
Dissipation Factor, at 1GHz and 22°C, per ASTM D150-22	0.102
Dielectric Strength, per ASTM D149-20	972 V/mil
Insulation Resistance, per MIL-I-46058C	5.5×10^{14} ohms (550TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	7.0×10^{10} ohms (70GΩ)
Fungus Resistance, per ASTM G21	Passes

Application of HumiSeal® 1B73 Pre-blend Products

Conformal coatings can be successfully applied to substrates that have been cleaned prior to coating and also to substrates assembled with low residue “no clean” materials. Users should perform adequate testing to confirm compatibility between the conformal coating and their particular assembly materials, process conditions and cleanliness level. Please contact HumiSeal® for additional information.

HumiSeal® 1B73 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® 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® Thinner 73. Viscosity in the dip tank should be checked regularly, using a simple measuring device such as a Zahn or Ford viscosity cup.

Spraying

HumiSeal® 1B73 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 and spray pressure will depend on the specific type of spray equipment used and operator technique.

Brushing

HumiSeal® 1B73 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® 1B73 Pre-blends should be stored away from excessive heat or cold, in tightly closed containers. HumiSeal® 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® Conformal Coatings should be carried out in accordance with local and National Health and Safety regulations.

The solvents in HumiSeal® 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 SDS prior to use.

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