

HumiSeal[®] 1B73D Series Acrylic Conformal Coatings

Technical Data Sheet

HumiSeal[®] 1B73D is a single component, fast drying, acrylic conformal coating intended for use on printed circuit assemblies. HumiSeal[®] 1B73D demonstrates excellent flexibility and electrical properties, fluoresces under UV light for ease of inspection and is easily repairable. HumiSeal[®] 1B73D has been formulated to reduce the appearance of bubbles when applied with selective film coating equipment. HumiSeal[®] 1B73D is formulated with the same base acrylic resin as HumiSeal[®] 1B73 and retains the same performance advantages as well as comparable cured properties. HumiSeal[®] 1B73D coating is RoHS Directive 2011/65/EU compliant, and recognized under UL File Number E105698.

Properties Specific to HumiSeal[®] 1B73D or 1B73D/600 PB54

	1B73D	1B73D/600 PB54
Density, per ASTM D1475	0.92 ± 0.02	0.925 ± 0.025
Solids Content, % by weight per Fed-Std-141, Meth. 4044	29.5 ± 2	19 ± 2
Viscosity, per Fed-Std-141, Meth. 4287	262 ± 20	54 ± 5
VOC, grams/litre	661	749.2

Properties of HumiSeal[®] 1B73D and 1B73D/600 PB54

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 2 hrs @ 76°C
Time Required to Reach Optimum Properties	7 days
Recommended Thinner	HumiSeal [®] Thinner 73
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-1
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	0.010
Insulation Resistance, per MIL-I-46058C	5.5 x 10 ¹⁴ ohms (550TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	7.0 x 10 ¹⁰ ohms (70GΩ)
Fungus Resistance, per ASTM G21	Passes
Maximum Operating Temperature	150°C

Application of HumiSeal[®] 1B73D Series

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" assembly 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[®] 1B73D 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.



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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® 1B73D 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® 1B73D 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® 1B73D and 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 MSDS/SDS prior to use.

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