

System Description

1B73 is a single component, fast air drying, acrylic coating for printed circuit assemblies. Characterized by a higher tack resistance at elevated temperatures not normally associated with thermoplastic materials. Has excellent electrical properties and flexibility. This coating is MIL-I-46058C and IPC-CC-830 qualified. U.L. recognized under the Component Program of Underwriters Laboratories, Inc., File Number E 105698. Fluoresces under ultraviolet light. 1B73 is also available in an aerosol can.

Properties of Liquid HumiSeal

Specific weight, (lb. per gal.) per ASTM, Meth. D1475	7.8
Solids Content, % by weight per Fed-Std-141, Meth.4044	30 ± 2
Viscosity, centipoise per Fed-Std--141, Meth. 4287	255 ± 45
Flashpoint, °C (°F) per ASTM, Meth. D56	-1 (30)
VOC (grams / liter)	654
Drying Time to Handle per Fed-Std-141, Meth.4061	30 minutes
Recommended Coating Thickness	1 – 3 mils
Recommended Curing Conditions	24 hrs @ rm. temp or 2 hrs. @ 170°F
Time Required to Reach Optimum Properties	7 days
Thinner, if needed (dipping, brushing, spraying)	Thinner 73
Recommended Stripper	Stripper 1080
Pot Life at Room Temperature	12 months
Shelf Life at Room Temperature	12 months

Properties of Cured HumiSeal

Thermal Properties

Continuous Use Operating Range °C(°F)	-65°C (-85°F) to +125°C (257°F)
Thermal Shock, per MIL-I-46058C	Passes
Solderability	Good
Coefficient of Thermal Expansion - DMA	67ppm / °C
Glass Transition Temperature - TMA	42°C
Young's Modulus - DMA	1606psi

Physical Properties

Clarity	Transparent
Build per Dip, mils, per ASTM, Meth.D823	1
Flexibility, per MIL-I-46058C	Excellent
Adhesion, per ASTM, Meth. D2197	Excellent
Flammability, per ASTM, Meth. D635	Self-Extinguishing
Weather Resistance	Very Good

Electrical Properties

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°C, per ASTM-D150-65T	2.6
Dissipation Factor, at 1MHz and 25°C, per ASTM-D150-65T	0.010
Insulation Resistance, ohms, per MIL-I-46058C	550 x 10 ¹² (550T)
Moisture Resistance, ohms, per MIL-I-46058C	70 x 10 ⁹ (70G)

Chemical Properties

Main Constituent	Acrylic
Fungus Resistance, per ASTM-G21	Passes
Resistance to Chemicals	Fair

Values are not intended for use in preparation of specifications.

APPLICATION

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 and all other contaminants. Contamination under the coating will cause problems that may lead to assembly failures.

HumiSeal coatings may be applied by brush, dip or spray.

Dipping

Depending on the complexity, density and configuration of components on the assembly, it may be necessary to reduce the viscosity of HumiSeal 1B73 with HumiSeal Thinner 73 in order to obtain a uniform film. Once optimum viscosity is determined, a controlled rate of immersion and withdrawal (2 to 6" per minute) will further insure 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 Thinner 73. Viscosity in the dip tank should be regularly checked by the use of a simple measuring device such as a Zahn or Ford viscosity cup.

Spraying

HumiSeal Type 1B73 can be sprayed using conventional spraying equipment. As a rule, the addition of Thinner 73 is necessary to assure 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. The spraying should be done under an exhaust hood so that the vapor and mist are carried away from the operator. The recommended ratio of HumiSeal Type 1B73 to HumiSeal Thinner 73 is 1 to 1 by volume, as a starting point. The quantities may be adjusted to obtain a uniform coating.

Brushing

HumiSeal Type 1B73 may be brushed with a small addition of HumiSeal Thinner 73. Uniformity of the film depends on component density and operator's technique.

Storage

HumiSeal Type 1B73 should be stored at room temperature, away from excessive heat, in tightly closed containers. HumiSeal products may be stored at temperatures of 0-100°F. Avoid direct sunlight. Prior to use, allow the product to equilibrate for 24 hours at 65-90°F.

Caution

The solvents in Type 1B73 are flammable. Do not use in presence of open flame or sparks. Avoid inhalation of vapors or spray. Use only in well-ventilated areas. Avoid contact with skin and eyes. If contact occurs, wash with soap and water. If swallowed, call physician immediately. Refer to MSDS before use.

All technical data in this bulletin is based on test results and is believed to be correct. However, since the end use of HumiSeal materials (and the manner of storing and handling them) is beyond our control, we make no warranty-expressed or implied as to the fitness of use, results to be obtained from or effects of use with respect to these materials. Their use shall be solely by the judgment of and at the risk of the user notwithstanding any statement in this bulletin. © Copyright 1992 CHASE CORPORATION.

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