

HumiSeal 1B73

Acrylic Conformal Coating

Technical Data Sheet

System Description

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. Qualified to MIL-I-46058C. Fluoresces under ultraviolet light. Also available in an aerosol can. U.L. recognized under the component program at Underwriters Laboratory; File No. E105698.

Properties of Liquid Humiseal

| | |
|--|---|
| Density | 0.9 ± 0.02 g/cm ³ |
| Solids Content | 30 ± 1% |
| Viscosity range | 250 ± 20cps |
| Flashpoint per ASTM, Meth. D56 | -1°C |
| Drying Time to Handle per Fed-Std-141, Meth.4061 | 30 minutes |
| Recommended Coating Thickness | 25-75µm |
| Recommended Curing Conditions | 24 hrs. @RT or 30 minutes @ 76°C (65-85%RH) |
| Time Required to Reach Optimum Properties | 7 Days |
| Thinner Needed (dipping, brushing, spraying) | Thinner 73 or 521 |
| Recommended Stripper | Stripper 1080A |
| Pot Life at room temperature | 18 months |
| Shelf life at room temperature | 18 months (from date of manufacture) |

Properties of Cured Humiseal

Thermal Properties

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

Physical Properties

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|------------------------------------|--------------------|
| Clarity | Transparent |
| Build per Dip, per ASTM, Meth.D823 | 25-75µm |
| 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

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|---|------------------------|
| Dielectric Withstand Voltage, volts per MIL-I-46058C | >1500 |
| 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 | 0.01 |
| Insulation Resistance, ohms, per MIL-I-46058C | 550 x 10 ¹² |
| Moisture Resistance, ohms, per MIL-I-46058C | 70 x 10 ⁹ |

Chemical Properties

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

Values are not intended for use in preparation of specifications.



Application Instructions

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, which 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 or 521 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, which 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 or 521 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 vapour 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 5-25°C. Avoid direct sunlight. Prior to use, allow the product to equilibrate for 24 hours at room temperature.

CAUTION

The solvents in Type 1B73 are flammable. Do not use in presence of open flame or sparks. Avoid inhalation of vapours 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.

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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

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