1B73
Acrylic Coating

TECHNICAL DATA SHEET

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-46058Cand 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. HumiSeal 1B73 is in full compliance with the RoHS Directive (Directive 2002/95/EC).

Properties of Liquid HumiSeal

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific weight, (lb. per gal.) per ASTM, Meth. D1475</td>
<td>7.7 ± .2</td>
</tr>
<tr>
<td>Solids Content, % by weight per Fed-Std-141, Meth.4044</td>
<td>28.5 ± 2</td>
</tr>
<tr>
<td>Viscosity, centipoise per Fed-Std--141, Meth. 4287</td>
<td>250 ± 20</td>
</tr>
<tr>
<td>Flashpoint, °C (°F) per ASTM, Meth. D56</td>
<td>-1(30)</td>
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<tr>
<td>VOC (grams / liter)</td>
<td>654</td>
</tr>
<tr>
<td>Drying Time to Handle per Fed-Std-141, Meth.4061</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Recommended Coating Thickness</td>
<td>1 – 3 mils</td>
</tr>
<tr>
<td>Recommended Curing Conditions</td>
<td>24 hrs @ rm. temp or 2 hrs. @ 170°F</td>
</tr>
<tr>
<td>Time Required to Reach Optimum Properties</td>
<td>7 days</td>
</tr>
<tr>
<td>Thinner, if needed (dipping, brushing, spraying)</td>
<td>Thinner 73</td>
</tr>
<tr>
<td>Recommended Stripper</td>
<td>Stripper 1080</td>
</tr>
<tr>
<td>Pot Life at Room Temperature</td>
<td>12 months</td>
</tr>
<tr>
<td>Shelf Life at Room Temperature</td>
<td>18 months from date of shipment.</td>
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</tbody>
</table>

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 10¹² (550T)
- Moisture Resistance, ohms, per MIL-I-46058C 70 x 10⁰ (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.

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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.

HumiSeal Division, Chase Specialty Coatings
Pittsburgh, PA 15238
Sales: 412-828-5470 or Sales@HumiSeal.com
Technical Assistance: 866-932-0800 or TechSupport@HumiSeal.com

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