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HumiSeal®

HumiSeal® 1B51NSLUD-40 Synthetic Rubber Conformal Coating
Technical Data Sheet

HumiSeal® 1B51NSLUD-40 is a fast drying, single component, synthetic rubber conformal coating that contains methylcyclohexane solvent that is more environmentally friendly than traditional solvents. The coating demonstrates excellent flexibility, low stress on components, fluoresces under UV for ease of inspection and is easily repaired. HumiSeal® 1B51NSLUD-40 is in full compliance with the RoHS Directive 2002/95/EC.

Properties of HumiSeal® 1B51NSLUD-40

Density, per ASTM D1475	0.79 ± 0.02 g/cm³
Solids Content, % by weight per Fed-Std-141, Meth. 4044	14 ± 2 %
Viscosity, per Fed-Std-141, Meth. 4287	35 ± 5 centipoise
VOC	690 grams/litre
Drying Time to Handle per Fed-Std-141, Meth. 4061	10 minutes
Recommended Coating Thickness	25 - 75 microns
Recommended Curing Conditions	24 hrs @ RT or 30 min @ 76°C
Time Required to Reach Optimum Properties	7 days
Recommended Thinner	HumiSeal® Thinner 905
Recommended Stripper	HumiSeal® Stripper 1080
Shelf Life at Room Temperature, DOM	12 months
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 125°C
Coefficient of Thermal Expansion - TMA	55 ppm/°C
Glass Transition Temperature - DSC	14°C
Modulus - DMA	93.1 MPa @ -20°C 73.5 MPa @ 0°C 35.3 MPa @ 20°C
Moisture Vapour Transmission, per ASTM E398-03	<1 g/m^2 · day · mil
Dielectric Withstand Voltage, per MIL-I-46058C	>1500 volts
Dielectric Breakdown Voltage, per ASTM D149	4900 volts
Dielectric Constant, at 1MHz and 25°C per ASTM D150-98	2.5
Dissipation Factor, at 1MHz and 25°C per ASTM D150-98	0.07
Insulation Resistance, per MIL-I-46058C	2.0 x 10^{14} ohms (200TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	1.0 x 10^{10} ohms (10GΩ)
Fungus Resistance, per ASTM G21	Passes

Application of HumiSeal® 1B51NSLUD-40

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, flux residues and all other contaminants. Contamination under the coating could cause problems that may lead to assembly failures.

Dipping

Depending on the complexity, density and configuration of components on the assembly, it may be necessary to reduce the viscosity of HumiSeal® 1B51NSLUD-40 with HumiSeal® Thinner 905 in order to obtain a uniform film. Once optimum viscosity is determined, a controlled rate of immersion and withdrawal (5-15 cm/min) will further ensure even deposition of the coating and 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 905. Viscosity in the dip tank should be checked regularly using a simple measuring device such as a Zahn or Ford viscosity cup.

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Spraying

HumiSeal® 1B51NSLUD-40 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 addition of HumiSeal® Thinner 905 is necessary to ensure 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 and operator technique. The recommended ratio of HumiSeal® 1B51NSLUD-40 to HumiSeal® Thinner 905 is 1:1 by volume; however the quantities may need to be adjusted to obtain a uniform coating.

Brushing

HumiSeal® 1B51NSLUD-40 may be brushed with a small addition of HumiSeal® Thinner 905. Uniformity of the film depends on component density and operator's technique.

Storage

HumiSeal® 1B51NSLUD-40 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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