HUMISEAL 2A64

Polyurethane Conformal Coating

System Description

A two component, solvent based polyurethane coating providing excellent humidity protection and dielectric properties. Characterized by high solids and low viscosity, it offers easy application processing. Qualified to MIL-I-46058C.

Properties of Liquid HumiSeal (Mixture of Part A&B)

Density, per ASTM, Meth. D1475	1.1 ±0.04
Solids Content, % by weight per Fed-Std-141, Meth.4041	55 ± 5
Viscosity,centipoise per Fed-Std-141,Meth.4287	150 max.
Flashpoint, per ASTM, Meth.D56	-4°C
Recommended Curing Conditions	3 hrs. @ 77°C
Time Required To Reach Optimum Properties	7 days
Thinner, if needed (dipping, brushing, spraying)	Thinner 64
Shelf Life at Room Temperature	6 months
Mixing Ratio:A To B (Byweight)	1 to 1

Properties of Cured HumiSeal

Thermal Properties

Continuous Use Operating Range	-65C to +125C
ThermalShock, per MIL-I-46058C	Passes
Solderability	Excellent
Coefficient of Thermal Expansion-DMA	93ppm
GlassTransition Temperature - TMA	23°C
Young'sModulus -DMA	1460psi

Physical Properties

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

Electrical Properties

Dielectric Withstand Voltage, volts per MIL-I-46058C	
Dielectric Breakdown Voltage, volts, per ASTM, Meth. D149	>1,500
Dielectric Constant, at 1MHz and 250C, per ASTM-D150-65T	3500
Dissipation Factor, at 1MHz and 250C, per ASTM-D150-65T	3.5
Insulation Resistance, ohms, per MIL-I-46058C	.0248
Moisture Resistance, ohms, per MIL-I-46058C	450 x 1012 48 x 109

Chemical Properties

Main Constituent	Polyurethane
Fungus Resistance, per ASTM-G21	Passes
Resistance to Chemicals	Excellent

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, 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 2A64 with HumiSeal Thinner 64 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 64. 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 2A64 can be sprayed using conventional spraying equipment. As a rule, the addition of Thinner 64 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 caried away from the operator. The recommended ratio of HumiSeal Type 2A64 to HumiSeal Thinner 64 is 1 to 1 by volume. The quantities may be adjusted to obtain a uniform coating.

Brushing

HumiSeal Type 2A64 may be brushed with a small addition of HumiSeal Thinner 64. Uniformity of the film depends on component density and operator's technique.

Storage

HumiSeal Type 2A64 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. For HumiSeal Types 1A20, 1C49, UV40 and 2A64; if coatings are partially used, the container should be purged with dry nitrogen prior to resealing. 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 2A64 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. HumiSeal Type 2A64 contains traces of monomeric isocyanate.

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