

HumiSeal® 1C49LVF Silicone Conformal Coating Technical Data Sheet

HumiSeal® 1C49LVF is a moisture curing, low viscosity, VOC solvent-free silicone conformal coating which provides excellent moisture and environmental protection for printed circuit assemblies. The coating demonstrates outstanding flexibility, fluoresces under UV light for ease of inspection and is repairable. HumiSeal® 1C49LVF may be cured at room or elevated temperatures. HumiSeal® 1C49LVF is recognized under UL File Number E105698 and is RoHS Directive 2002/95/EC compliant.

Properties of HumiSeal® 1C49LVF

Density, per ASTM D1475	0.97 ± 0.03 g/cm ³
Solids Content, % by weight per Fed-Std-141, Meth. 4044	50 %
Viscosity, per Fed-Std-141, Meth. 4287	550 ± 250 centipoise
VOC	0 grams/litre
Recommended Coating Thickness	50 - 200 microns
Tack Free Time, at room temperature	<10 minutes
Recommended Curing Conditions	24 hrs @ RT or 20 min @ 76°C*
Time required to Reach Optimum Properties	7 days
Recommended Stripper	HumiSeal® Stripper 1090
Shelf Life, DOM	12 months
Thermal Shock, 50 cycles per MIL-I-46058C	-65°C to 200°C
Modulus - DMA	10.2 MPa @ -40°C 4.7 MPa @ 25°C 4.0 MPa @ 80°C
Glass Transition Temperature - DSC	< -65°C
Flammability, per UL94	V-0
Dielectric Withstand Voltage, per MIL-I-46058C	>1500 volts
Shore Hardness, A, per ASTM D2240	25
Volume Resistivity, per ASTM D257	4.25 x 10 ¹⁸ ohm-cm
Insulation Resistance, per MIL-I-46058C	3.9 x 10 ¹² ohms (3.9TΩ)
Moisture Insulation Resistance, per MIL-I-46058C	1.94 x 10 ¹⁰ ohms (19.4GΩ)
Fungus Resistance, per ASTM G21	Passes

*Place an open pan of water in the oven during curing

Application of HumiSeal® 1C49LVF

Cleanliness of the substrate is of extreme importance for the successful application of a conformal coating. Contamination under the coating could cause problems that may lead to assembly failures. For best performance, surfaces should be free of moisture, dirt, wax, grease, flux residues and all other contaminants. If this product will be applied over "no clean" assembly materials, the user should conduct adequate testing to verify compatibility and reliability of the coated assembly.

1C49LVF is designed for application without additional thinning. Solvents or other thinners should not be mixed with 1C49LVF.

Brushing

Uniformity of the film depends on component density and operator's technique.

Dipping

A controlled rate of immersion and withdrawal (5-15 cm/min) will ensure even deposition of the coating and ultimately a uniform film. Blanketing dip tanks with an inert gas such as nitrogen can extend pot life.

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Spraying

HumiSeal[®] 1C49LVF may be applied using most conventional spraying equipment. When in doubt, test the ability of the spray equipment before applying coating to production boards. Spraying should be done in an environment with adequate ventilation so that the vapour and mist are carried away from the operator. The use of thinner is not required or recommended for HumiSeal[®] 1C49LVF.

Storage

HumiSeal[®] 1C49LVF should be stored at 21°C or below in tightly closed containers away from direct sunlight. If coating is partially used, the container should be purged with dry nitrogen prior to resealing. Prior to use, allow the product to equilibrate for 24 hours at room temperature.

Caution

Application of HumiSeal[®] Conformal Coatings should be carried out in accordance with local and National Health and Safety regulations.

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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