

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 2011/65/EU 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 1091
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

Conformal coatings can be successfully applied to substrates that have been cleaned prior to coating and also to substrates assembled with low residue, "no clean" materials. Users should perform adequate testing to confirm compatibility between the conformal coating and their particular assembly materials, process conditions and cleanliness level. Please contact HumiSeal for additional information.

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 SDS prior to use.

Contact HumiSeal®

HumiSeal North America

201 Zeta Drive
Pittsburgh, PA 15238
USA
Tel: +1 412-828-1500
Toll Free (US only): 866-828-5470
sales@humiseal.com

HumiSeal Technical Center

295 University Avenue
Westwood, MA 02090
USA
Tel: +1 781-332-0734
Fax: +1 781-332-0703
techsupport@humiseal.com

HumiSeal Europe

505 Eskdale Road, IQ Winnersh
Berkshire RG41 5TU
UK
Tel: +44 (0)1189 442 333
Fax: +44 (0)1189 335 799
europesales@chasecorp.com

HumiSeal India

J-154, M.I.D.C Bhosari
Pune 411 026
Maharashtra
India
Tel: +91 20 66308098
indiatechsupport@chasecorp.com

HumiSeal S.A.R.L

4/6 Avenue Eiffel
78420 Carrieres-Sur-Seine
France
Tel: +33 (0) 1 30 09 86 86
Fax: +33 (0) 1 30 09 86 87
humiseal.sarl@chasecorp.com

HumiSeal Asian Support

Tel: 852-9451-6434
Fax: 852-2413-6289
asiatechsupport@humiseal.com

HumiSeal Europe Support

Tel: +44 (0)1189 442 333
Fax: +44 (0)1189 335 799
europetechsupport@chasecorp.com

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