

SILTRUST™ ECC4865 CONFORMAL COATING

Description

SILTRUST ECC4865 is a one component, solventless silicone thermal cure silicone conformal coating. This low viscosity product is easily applied via flow coating, brushing, spraying or dipping and has been found to provide outstanding moisture and environmental protection for printed circuit boards and other electronic assemblies.

Key Features and Typical Benefits

- Solventless, low VOC formulation
- Extremely long coating bath life
- Outstanding long-term viscosity stability
- Very fast thermal cure mechanism
- Primerless adhesion to many substrates
- Excellent high/low temperature performance
- Flame retardant: UL94V-0 recognized (File No. E135148)

Typical Physical Properties

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Uncured Properties		
Specific Gravity at 25 °C		0.98
Viscosity at 25 °C	cps	210
Color		clear
Flash Point	° C	> 125
Cured Film Properties		
Durometer Hardness	Shore A	35
Dielectric Strength	volts / mil	500

Dielectric Constant		2.4
Dissipation Factor		0.01
Volume Resistivity	$\Omega \cdot \text{cm}$	5E14
Operating Temperature Range (continuous)		-40 °C to +200 °C
Fungus Resistance (ASTM G21)		Excellent
Chemical Resistance		Very Good

Typical physical properties are average data and should not be used as or to develop product specifications

Processing Recommendations

Surface Preparation

The cleanliness of the circuit board substrate is critical to successful application of the conformal coating and its long-term performance. Surfaces must be free of moisture, dirt, wax, grease and other contaminants. Failure to remove contamination can lead to long-term failure of the circuit assembly.

Solder Flux

Solder flux residues on the surface of a printed circuit board can greatly impact the performance of a conformal coating by interfering with coating adhesion and possibly interfering with the coating's cure mechanism. This is of particular concern when using 'no-clean' flux systems. Careful compatibility testing with the flux system to be used is strongly recommended.

Compatibility

Certain materials such as butyl and chlorinated rubber, sulfur containing materials, amines and certain metal soap-cured RTV silicone rubber compounds can cause cure inhibition. Cure inhibition is characterized by a lack of cure of the liquid silicone coating at the interface between it and the substrate being coated. Compatibility tests are strongly recommended.

Application Method

ECC4865 can be applied by dipping, spraying, flow coating, or brushing. When dip coating, a controlled dip insertion and withdrawal rate of between 2 - 6 inches per

minute will typically yield a 3 - 5 mil average coating thickness per side. Spray coating should be done in an enclosed and ventilated area.

Curing

ECC4865 is designed to be thermal cured. The minimum cure temperature is 105 °C. The maximum cure temperature is 175 °C. Curing should be done in a ventilated oven. Actual cure time at a given temperature for a given part is dependent upon a variety of factors, including heat sink characteristics of the part being coated, type of oven (i.e. convection, IR, etc.), and oven loading factors. For more detailed information of the curing properties of ECC4865, contact Momentive Performance Materials Technical Service.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

Contact Information

Email

commercial.services@momentive.com**Telephone**

Americas	Latin America	EMEAI- Europe, Middle East, Africa & India	ASIA PACIFIC
+1 800 295 2392 Toll free*	Brazil +55 11 4534 9650 Direct Number	Europe +390510924300 Direct number	China 800 820 0202 Toll free +86 21 3860 4892 Direct number
+704 805 6946 Direct Number	Mexico +52 55 2169 7670 Direct Number	India, Middle East & Africa + 91 44 71212207 Direct number*	Japan +81 3 5544 3111 Direct number
*All American countries		*All Middle Eastern countries, Africa, India,	Korea +82 2 6201 4600

For literature and technical assistance, visit our website at: www.momentive.com

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