MOMENTIVE™

Technical Data Sheet

ECC3050S

Description

ECC3050S conformal coating is a low viscosity, solventless silicone coating that cures very rapidly, at room temperature, to a soft, transparent silicone rubber. ECC3050S conformal coating can also be cured using a low temperature oven process to reduce cure and handling times, making it an excellent candidate to consider for high volume production conformal coating of printed circuit board assemblies with temperature limited components.

Key Features and Benefits

- Fast Curing - typically ready to handle in just minutes
- Solventless Formulation - low VOC formulation
- Low Temperature Cure - room/low temperature cure (<60°C) generally safe for sensitive components
- Low Viscosity - generally suitable for spray or flow coating application
- Excellent Adhesion - outstanding long term moisture protection
- Low Modulus/Low Stress - minimizes coating-induced CTE stress to sensitive components

Typical Physical Properties

UNCURED PROPERTIES	
Viscosity, at 23°C [mPa•s]	550
Tack-Free Time(1), minutes (@ 23°C/73°F, 50% RH)	5
Cure Time(1), minutes (@ 23°C/73°F, 50% RH)	30
Cure Time(1), minutes (@ 60°C/140°F, 15% RH)	2

(1) 100µm (4 mils) thickness

CURED PROPERTIES (3 days @ 23°C/73°F, 50% RH)	
Appearance	Transparent
Specific Gravity (23°C)	0.98
Hardness - Type A	22
Volume Resistivity MW•m {ohm•cm}	$1x10^{7}$ {$1x10^{15}$}
Dielectric Strength kV/mm (v/mil)	20 (508)
Dielectric Loss (@ 60Hz)	0.001
Dielectric Constant (@ 60Hz)	2.60

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a 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 Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon

request, from any Momentive Performance Materials (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.

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.

Application Method

ECC3050S conformal coating can be applied by spray or flow coating. Because ECC3050S conformal coating reacts with atmospheric moisture, dip coating and brush coating are not recommended for volume production operations. The use of atmospherically controlled application equipment is strongly recommended in order to maximize available work life. Spray coating should be done in an enclosed and ventilated area.

Curing

ECC3050S conformal coating typically cures under room temperature conditions. Depending upon ambient conditions, coated circuit boards may be cured in as little as 30 minutes. The use of a low temperature oven cure (<60°C) may significantly reduce cure/handling times to as little as three minutes. 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 applied thickness of coating, 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 ECC3050S conformal coating, contact Momentive Performance Materials.

Many of Momentive's materials may meet the requirements for homogeneous materials under 2002/95/EC (RoHS). Please contact Momentive for additional information.

Limitations

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

Contact Information

For product prices, availability, or order placement, contact our customer service by visiting momentive.com/ContactSilicones.

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