

## **ACC16 (ESP457)** **Silicone Conformal Coating**

### **INTRODUCTION**

**ACC16** is a fast curing liquid, 1-component silicone coating. The product can be applied by pouring or brushing and is readily cured to a tough, transparent rubber. **ACC16** should be used at a coating thickness of 350 to 500 microns providing protection against water ingress and environmental contaminants. Coatings of <350 microns are not recommended and will result in poor curing and a tacky coating. This coating conforms to the VOC legislation and contains 100% solids on a silicone elastomer basis.

### **Key Feature**

- **Fast room temp cure**
- **Thick coating weight for 350 to 500 microns**
- **Excellent adhesion to most substrates**
- **Contains UV trace**

### **APPLICATION**

The bulk product may be poured or brushed onto the circuit. Pouring or brushing will give a film thickness of 350 to 500 microns. The product contains a UV trace to allow inspection of the board after coating to ensure complete and even coverage.

The boards should be thoroughly cleaned before coating for best adhesion/performance. Coating over no clean fluxes is possible as long as other surface contaminants are not present

### **CLEANING**

The boards should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is possible. Some flux residues must be removed, as they become corrosive if left on the PCB. ACC manufacture a range of 100% Ozone Friendly cleaning products - both solvent and water based. All clean to military standards (please contact ACC for further information).

### **SPRAYING**

Using a Nordson SC-300 swirl coat at 100 mm/second and 30 psi the maximum recommended dilution ratio is:

70 parts ACC16  
30 parts ACC34 or ACC34UV

A coating thickness of 350 microns can be achieved which is touch dry in 8 minutes and fully cured in 90 minutes at 25°C and 55% humidity. Higher dilutions of ACC16 are not recommended and will result in poor curing and a tacky coating.

### **Evaporation of ACC34 in coatings of 350 to 500 microns:**

<b><u>Temperature, °C</u></b>	<b><u>Time</u></b>
16	48 hours
45	24 hours
60	1.5 hours
125	0.5 hours

### **DIP COATING**

This is not recommended for large scale production, small baths of <5 litres are suitable but the ACC16 must not be exposed to the atmosphere for > 7 minutes during any coating campaign and must be returned to the original container and sealed. Please note that continual use of ACC16 by this method will reduce the life of the product and may result in poor coating quality

### **BRUSHING**

Ensure the coating has been shaken or mixed thoroughly (refit the cap after mixing) and stood for 2h to allow bubbles to separate. The coating should be used at room temperature (above 16C) using a good quality brush apply the product gently such as to achieve a good coating and not to disturb wiring. The board should be left to cure at 16 to 45°C with a relative humidity of greater than 40%

### **CURING TIMES / CONDITIONS**

For brushing and dip coating the film will be touch dry after 8 mins at 25°C/ 55% humidity. The full properties of the coating will be obtained after 90 minutes at room temperature.

### Disclaimer: -

The information and recommendations in this publication are to the best of our knowledge reliable. However, nothing herein is to be construed as a warranty or representation. Users should make their own tests to determine the applicability of such information or the suitability of any products for their own particular purposes. Statements concerning the use of the products described herein are not to be construed as recommending the infringement of any patent and no liability for infringement arising out of any such use is to be assumed.

## **DOUBLE COATING**

Whilst this should not normally be required, a second coating may be applied after the first coating is dry to ensure the two coats bond together.

<b>Property</b>	<b>Test Method</b>	<b>Value</b>
<b>Uncured Product</b> (Tested at 25°C/55% ± 5% Humidity)		
Colour:		<b>Clear to Pale yellow Liquid</b>
Appearance		<b>500 mPa.s</b>
Viscosity	Brookfield	<b>8 mins</b>
Tack free time	AMB 001	<b>90 mins</b>
Cure to 500 microns		

## **Cured Elastomer**

After 7 days at 23°C/55% ± 5% Humidity on a 3mm thick test sheet

Hardness, Shore A	ASTM D 2240-95	<b>32</b>
Density (25C, g/ml)	ASTM D70	<b>1.01</b>
Flash Point	ASTM D93	<b>150°C</b>
Pensky Martin (closed cup)		
Solids content		<b>100%</b>
Min Service Temp		<b>-50 °C</b>
Max Service Temp		<b>200°C</b>
Coefficient of thermal expansion		
Volumetric, ppm/°C		<b>930</b>
Linear, ppm/°C		<b>310</b>

## **Electrical properties**

Volume Resistivity	ASTM D-2557	<b>2.78E+13</b>
		<b>Ω cm</b>
Dielectric constant (@1MHz)	ASTM D150	<b>1.27</b>
Dissipation factor (@1MHz)	ASTM D150	<b>0.00192</b>

## **STORAGE / SHELF LIFE**

When stored in original closed containers at 5 to 32°C the shelf life is expected to be 12 months.

## **HEALTH AND SAFETY**

Material Safety Data Sheets are available at [www.acc-silicones.com](http://www.acc-silicones.com) or upon request through the ACC Silicones sales office

## **PACKAGING**

**ACC16** is available in 1, 5 and 20 kg non-returnable packages

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