Technical Data Sheet

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.

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:

Temperature, °C	Time
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.

DOUBLE COATING

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

Property	Test Method	Value
Uncured Product		
(Tested at 25°C/55% ± 5% Humidity)		
Colour:		**Clear to Pale yellow**
Appearance		**Liquid**
Viscosity	Brookfield	**500 mPa.s**
Tack free time	AMB 001	**8 mins**
Cure to 500 microns		**90 mins**
Cured Elastomer		
After 7 days at 23°C/55% ± 5% Humidity on a 3mm thick test sheet		
Hardness, Shore A	ASTM D 2240-95	**32**
Density (25C, g/ml)	ASTM D70	**1.01**
Flash Point Pensky Martin (closed cup)	ASTM D93	**150°C**
Solids content		**100%**
Min Service Temp		**-50 ºC**
Max Service Temp		**200ºC**
Coefficient of thermal expansion		
Volumetric, ppm/°C		**930**
Linear, ppm/°C		**310**
Electrical properties		
Volume Resistivity	ASTM D-2557	**2.78E+13 Ω cm**
Dielectric constant (@1MHz)	ASTM D150	**1.27**
Dissipation factor (@1MHz) (@1MHz)	ASTM D150	**0.00192**

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 or upon request through the ACC Silicones sales office

PACKAGING

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

Revision Date: 22/07/2016

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