

ACC15 Silicone Conformal Coating

INTRODUCTION

ACC15 is a low viscosity, 1-component, condensation curing silicone coating. The uncured product can be applied by pouring or brushing and is readily cured to a tough, transparent rubber. It can be used to coat printed circuit boards to prevent ingress of water and environmental contaminants. This coating conforms to the VOC legislation and contains 100% solids on a silicone elastomer basis.

Key Features

- Room temperature cure or mild heat acceleration at 60°C
- Low viscosity
- 100% solids
- Fluorescent UV aid for Production QA checks
- Excellent adhesion to many substrates
- Low odour
- RoHS compliant

APPLICATION

The bulk product may be poured or brushed onto the circuit. Pouring or brushing will give a film thickness of 100 to 1000 microns. The product contains an UV trace to allow inspection of the board after coating to ensure complete and even coverage.

Boards should be thoroughly cleaned before coating for best adhesion / performance. Coating over no clean fluxes is possible so 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).

DIP COATING

This is not recommended for large scale production, small baths of < 5 litres are suitable but the ACC15 must not be exposed to the atmosphere for > 10 minutes during any coating campaign and must be returned to the original container and sealed. Please note that continual use of ACC15 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 2 hours to allow bubbles to separate. The coating should be used at room temperature (above 16°C) 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 60°C with a relative humidity of >40%.

SPRAYING

ACC15 may need to be thinned with thinners before spraying. For manual air guns (e.g. Devilbliss etc) use ACC34 Thinner - typically 1 part coating to 1 part ACC34 thinner for a 100 to 200 mPa.s viscosity. The nozzle of the spray gun needs to be selected to give an even spray to suit the selected viscosity of the coating material. The normal spray gun pressure required is 27.6 – 34.5 x 10 exp 6-kN/m exp2 (40-50 psi).

For airless spraying equipment (Nordson, PVA, DIMA, Speedline etc) a viscosity of 50-100 mPa.s is preferred. This may be achieved with the ACC34 Thinner at 1 part ACC15UV coating to 1 - 1.5 parts ACC34 Thinner. The board should be left to cure at 16 to 45°C with a relative humidity of >40%.

IMPORTANT: Allow 48 hours at 16 to 45°C for evaporation of the ACC34 Thinner in coatings between 100 to 1000 microns thickness.

CURING TIMES / CONDITIONS

For brushing and manual spraying the film will be touch dry after 12 minutes at 23°C / 60% humidity). The full properties of the coating will be obtained after 24 hours at room temperature –curing can be accelerated by using an oven at 60°C

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.

Technical Data Sheet

DOUBLE COATING

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

Property	Test Method	Value
----------	-------------	-------

Uncured Product

(Tested at 23°C / 60 +/- 5% Humidity)

Colour:	Translucent Appearance	
	Pale Yellow liquid	
Viscosity, mPa.s:	Brookfield	1180
Tack free time, mins	AMB 001	12
Cure to 1 mm, Minutes		40

Cured Elastomer

After 7 days at 23°C / 60 +/- 5% Humidity on a 3 mm thick test sheet.

Hardness, Shore A	ASTM D 2240-95	18
Density (25°C, g/ml)	ASTM D70	1.02
Flash Point, °C	ASTM D93	>150
<i>Pensky Martin (closed cup)</i>		
Solids Content, %		100
Min Service Temp, °C		-55
Max Service Temp, °C		200
Coefficient of thermal expansion:		
Volumetric, ppm/°C		930
Linear, ppm/°C		310

Electrical Properties:

Volume Resistivity: (Ω.cm)	ASTM D-257	1.88E+15
Surface Resistivity: (Ω)	ASTM D-257	8.59E+14
Dielectric Strength: (kV/mm)	ASTM D-149	18.5

Storage / Shelf life

Expected to be 12 months in original unopened containers stored between 5 to 32°C.

Health and Safety

Separate Health and Safety sheet available on request

Packaging

ACC15 = 1,5, 18 and 20 kg non returnable packages.

Revision Date: 4/12/2012

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.