

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 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 60°C with a relative humidity of >40%.

SPRAYING

Using a Nordson SC-300 swirl coat at 50 mm/second and 40 psi the ACC15 can be used undiluted to achieve a coating thickness of 400 microns which is touch dry in 11 minutes and fully cured in 20 minutes at 25°C and 55% humidity

Using a Nordson SC-300 swirl coat at 80 mm/second and 80 psi the maximum recommended dilution ratio is:

50 parts ACC15
50 parts ACC34 or ACC34UV

A coating thickness of 200 microns can be achieved which is touch dry in 16 minutes and fully cured in 40 minutes at 25°C and 55% humidity

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

DOUBLE COATING

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

Disclaimer: -

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Technical Data Sheet



Property	Test Method	Value
Uncured Product (Tested at 25°C / 55 +/- 5% Humidity)		
Colour:		Translucent pale yellow Liquid
Appearance		
Viscosity, mPa.s:	Brookfield	1180 mPa.s
Tack free time	AMB 001	12 minutes
Cure to 1 mm		40 minutes

Cured Elastomer

After 7 days at 25°C / 55 +/- 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	ASTM D93	>150°C
<i>Pensky Martin (closed cup)</i>		
Solids Content		100%
Min Service Temp		-55°C
Max Service Temp		200°C
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

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

HEALTH AND SAFETY

Material Safety Data Sheets are available at www.acc-silicones.com or upon request from the ACC Silicones sales office

PACKAGING

ACC15 is available in 1, 5, 18 and 20 kg non-returnable packages

Revision Date: 27/12/2014

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