

ACC14 UV Silicone Conformal Coating

INTRODUCTION

ACC14 UV is a low viscosity, 1-component, condensation curing silicone coating. The uncured product can be applied by pouring or spraying 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 with the VOC legislation and contains 100% solids on a silicone elastomer basis.

Key Features

- Room temperature cure
- 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 sprayed or brushed onto the circuit. Spraying 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 ACC14UV must not be exposed to the atmosphere for > 15 minutes during any coating campaign and must be returned to the original container and sealed. Please note that continual use of ACC14 UV by this method will reduce the life of the product and may result in poor coating quality.

SPRAYING

ACC14 UV needs 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 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 ACC14UV 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.

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 45°C with a relative humidity of >40%.

CURING TIMES / CONDITIONS

For brushing and manual spraying the film will be touch dry after 40 minutes at 23°C / 60% humidity). Using the ACC34 Thinner, this may be 5-10 mins – depending on conditions. The full properties of the coating will be obtained after 24 hours at room temperature (48 hours if using ACC34 Thinner) –curing can be accelerated by using a humidity oven at 45°C and 100% humidity.

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	Storage / Shelf life
Uncured Product (Tested at 23°C / 60 +/- 5% Humidity)			Expected to be 12 months in original unopened containers stored between 5 to 40°C.
Colour:		Colourless	Health and Safety Separate Health and Safety sheet available on request
Appearance		Clear	
Viscosity, mPa.s:	Brookfield	250 to 350	Packaging ACC14 UV = 1 kg, 5 kg and 20 kg containers ACC34 Thinner = 1 kg, 5 kg 25 kg and 200 kg containers
Tack free time, mins	AMB 001	40	
Cure to 1 mm, hours		16 hours	

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	25
Density (25°C, g/ml)	ASTM D70	1.01
Flash Point, °C	ASTM D93	>150
Pensky Martin (closed cup)		
Solids Content, %		100
Min Service Temp, °C		-50
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	2.45E+13
Surface Resistivity: (Ω)	ASTM D-257	1.93E+13
Dielectric Strength: (kV/mm)	ASTM D-149	18.5

Revision Date: 11/01/2008



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