ACC11 ()
Acrylic conformal coating

INTRODUCTION

ACC11 is a flexible transparent coating for the protection of electronic circuitry designed to meet the highest defence and military standards. It is designed to be removable by ACC PCB cleaner .The product is available in both aerosol and bulk form.

Key Feature

- **Meets requirements of MIL-I-46058C and IPC-CC-830**
- **Removable with ACC PCB cleaner for rework**
- **Wide temperature range -55 to +130 C**
- **RoHS compliant**
- **Can be soldered through without releasing toxic gas**

APPLICATION

The bulk product may be sprayed, dipped or brushed onto the circuit. The thickness of the coating depends on the method of application. Single dipping gives a coating of ca 25 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.

DRYING TIMES/CURING CONDITIONS

For dipping and manual spraying the film will be touch dry after 10-20mins (depending on ambient temperature / airflow). Using the fast dry thinners this may be 5-10 mins – depending on conditions.
The full properties of the coating will be obtained after 24h at room temperature – drying can be accelerated by using a thermal treatment of 2h @ 90C or 4h @ 60C.

DIP COATING

The product may be applied by automated dip coating equipment. Ensure the coating has been agitated thoroughly and allowed to stand for 2 hrs to allow bubbles to disperse. ACC SILICONE thinners ACC31 may be used to keep the product at a suitable viscosity for dipping. The viscosity may be measured by Brookfield viscometer or "flow cups"

The board assembly should be immersed in the coating vertically (or as close to vertical as possible). Connectors should not be immersed OR be carefully masked with ACC 13 SYNTHETIC PEELABLE MASK.

The board should be left immersed for 1 minute until air bubbles have dispersed. The board(s) should be withdrawn very slowly so that an even film of coating covers the surface. The Boards should be left to drain over the tank. When the draining is complete the boards should be placed in an air circulating drying cabinet (or – for accelerated drying - flame proof oven at temperatures up to 60C).

SPRAYING

BULK ACC SILICONE COATING needs to be thinned with thinners before spraying. For manual air guns (e.g. Devilbliss etc) use ACC SILICONE ACC31 THINNERS - typically 1:1 (Coating to Thinner). 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 etc) a viscosity of 50-100cps is preferred. This may be achieved with ACC31 thinners 1:2) These are guidelines. We will work with the customer to advise on an appropriate ratio for their existing equipment.

BRUSHING

Ensure the coating has been mixed thoroughly 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 dried in an air circulating cabinet or flameproof oven.

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DOUBLE COATING

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.

RESISTANCE TO ATTACK

Solvent Resistance	**Poor**
Humidity Resistance	**Excellent**
Mould Resistance	**Excellent**

Storage / Shelf life **24** months unopened at 20 – 30C

Health and Safety

Separate Health and Safety sheet available on request

Packaging

5L UNII plastic or metal containers , 12 x 400ml aerosols

Revision Date: 08/12/2005

Property	**Test Method**	**Value**
Uncured Product		
Appearance		**Clear fluorescent liquid**
UV Trace		**Yes**
Density (25C, g/ml)	ASTM D70	**0.90**
Flash Point	ASTM D93	**-4 ºC**
Pensky Martin (closed cup)		
Solids Bulk		**35** %
Solids Aerosol		**17** %
Viscosity Bulk (mPa.s)	Brookfield RVF	**250-350**
Tack time minutes		**10 – 20**
Full cure hours		**24**
Cured Coating		
Minimum working Temperature		**-55 ºC**
Maximum working Temperature		**130ºC**
Flammability	UL 94 V(0) Self extinguishing	
Electrical resistance (ohms)		**10E+15**
(Dry film 25-75 micron film IPC board)		
Volume Resistivity	ASTM D257	**10E+16**
Dielectric constant (@1MHz)	ASTM D150	**2.21**
Dissipation factor (@1MHz)	ASTM D150	**0.01**
Dielectric Breakdown	ASTM D149	**2 /MIL**
Other Test standards	MIL I46058C,IPC CC830B,DEFSTAN 59/47/issue 4 ,UL746C	

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