Technical Data Sheet

ACC11 (AF 230200016 / 130W20008;130E20008))

ACRYLIC conformal coating (bulk / aerosol)

Introduction

ACC ACRYLIC CONFORMAL COATING is a flexible transparent acrylic 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 Features

- Meets requirements of MIL-I-46058C and IPC-CC-830
- Excellent adhesion
- Contains no harmful solvents such as toluene
- Fluorescent UV aid for Production QA checks
- Wide temperature range -55 - +130C
- Removable with ACC PCB cleaner for rework
- Resistant to mould growth
- Can be soldered through without releasing toxic gases (No polyurethanes or isocyanates)
- RoHS compliant

Use and Cure Information

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.

NOTE all acrylics should be applied at temperatures above 16C and at humidity's below 75% to avoid moisture absorption and a cloudy coating.
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

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.

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 ACRYLIC thinners 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 ACC ACRYLIC coating vertically (or as close to vertical as possible). Connectors should not be immersed OR be carefully masked with ACC 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 ACRYLIC COATING needs to be thinned with thinners before spraying. For manual air guns (e.g. Devilbliss etc) use ACC ACRYLIC COATING THINNERS - typically 1 parts coating to 1 parts thinners. 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 the standard thinners (1 parts) to, coating (2 part) OR - for faster drying - ACC PRECISION CLEANER can be used (1 PART with 3 parts coating). These are guidelines. We will work with the customer to advise on an appropriate ratio for their existing equipment.

DRYING TIMES/CURING CONDITIONS

For dipping and manual spraying the film will be touch dry after 10-20 mins (depending on ambient temperature / airflow). Using the fast dry thinners this may be 5-10mnis – 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.

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.

Storage / Shelf life

3 years unopened at 10 – 30C

Health and Safety

Health and safety sheet available separately

Packaging

5L UN II plastic or metal containers; 12 x 400ml aerosols

Revision Date 17/03/2015

Uncured Product

Appearance	Visual	Clear fluorescent liquid
QA aid	UV trace	Purple /blue fluorescence
Density(25C, g/ml)	ASTM D70	0.90
Flash Point Pensky Martin (CC)	ASTM D93	-4C
Solids		35% (bulk) ; 15% (aerosol)
Viscosity, (mPa.s)	Brookfield RVF	250 - 350
Tack time		10 – 20 minutes
Drying/Curing time		Full cure 24h
Shelf life		3 years unopened

Cured coating

Temperature range	-55 to + 130C
Flammability	Will conform to the requirements of UL94 V0 (self-extinguishing)

Electrical resistance (ohms) (dry film 25 – 75 microns)		> 10 exp 15
Volume resistance	ASTM D257	> 10 exp 16
Dielectric constant (1MHz)	ASTM D150	2.21 @100kHz
Dissipation factor	ASTM D150	0.01 @ 1MHz
Dielectric Breakdown voltage	ASTM D149	2000V/MIL
Comparative Tracking Index, (CTI)		>300 volts

Cleaning/Rework ACC 50 PCB cleaner

Other Test standards:-
MIL I46058C,
IPC CC830B,
DEFSTAN 59/47/issue 4,
UL746C

Property Test Method Value

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