

ACC11 (AF 230200016 / 130W20008;130E20008)

Characterization

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 IPCCC-830
- ACC11 Bulk UL listed file No. E493561
- 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

Technical Data

	Uncured Product		
QA aid	UV trace Purple / blue fluorescence		
Density @ 25°C	0.90	g/ml	ASTM D70
Flash Point	-4	°C	ASTM D93
Pensky Martin (CC) Solids	35 (bulk); 15 (aerosol)	%	
Viscosity	250-350	mPas	Brookfield RVF
Tack time	10-20	min	
Drying/Curing time	Full cure 24	H	
	Cured coating		
Temperature range	-55 - +130	°C	
Flammability	UL listed in File No. E493561		
	Electrical properties		
Electrical resistance (dry film 24 5-75 µm)	>10 exp 15	Ohms	
Volume resistance	>10 exp 16	ohms*cm	ASTM D-257
Dielectric constant @ 100kHz	2.21	1MHZ	ASTM D-150
Dissipation factor @1MHz	0.01		ASTM D-150
Dielectric breakdown	2000	V/MIL	ASTM D-149
Comparative Tracking Index, (CTI)	>300	volt	

Storability / Storage

With a proper storage the product will hold for approx. 18 months if stored properly below 10 - 30°C and protected from frost in a dry place in closed original containers.

The above given values are product describing data. Please consult the 'delivery specification' for binding product specifications. Further data about product properties, toxicological, ecological data as well as data relevant to safety can be found in the safety data sheet.

Application Technique

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 16 °C 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 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 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 60°C).

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 $27.6 - 34.5 \times 10 \text{ exp } 6 - \text{ kN/m exp } 2$ (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 time / 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 5-10mins – 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 @ 90°C or 4h @ 60°C.

Double coating

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

It is absolutely important to check the compatibility in preliminary tests if unknown substrates are used.

Safety

Please observe our EC safety data sheets and the safety remarks on our container labels when handling our products. The dangerous goods regulations and the accident prevention regulations of the professional associations must be particularly observed. Keep the EC safety data sheet of the applied product at hand since it provides you with useful instructions for the safe use and disposal of the product as well as for actions to be taken in case of accidents.

We reserve the right to modify the product and technical leaflet.

Our department for applied technique is always at your service for further information and advice.

Our technical advice and recommendations given verbally, in writing or by trials are believed to be correct. They are neither binding with regard to possible rights of third parties nor do they exempt you from your task of examining the suitability of our products for the intended use. We cannot accept any responsibility for application and processing methods which are beyond our control.

Edition: October 2020

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