

## HFAC Acrylic Conformal Coating

HFAC is a flexible and transparent acrylic conformal coating formulated without the use of hazardous aromatic solvents. It has been designed for the protection of electronic circuitry and meets the requirements of many industry standards.

- Transparent coating with excellent clarity and UV resistance; ideal for LED applications
- Reduces operational hazardous; free from aromatic solvents such as Toluene and Xylene
- Fluoresces under UV light for ease of inspection
- Ideal for applications requiring rework; can be removed using Electrolube ULS

<b>Approvals</b>	<b>RoHS-2 Compliant (2011/65/EU): IPC-CC-830:</b>	<b>Yes Meets Requirements</b>
<b>Liquid Properties</b>	Appearance: Density @ 25°C (g/ml): VOC Content: Flash Point: Solids content: Viscosity (mPa s @ 25°C): Touch Dry: Recommended Curing Time:  Coverage @ 25µm:	Pale Coloured Liquid 0.92 75% 12°C 25% 360 20-30 minutes 24 Hours @ 20°C Or 2 Hours @ 60°C 9m <sup>2</sup> per litre
<b>Dry Film Coating</b>	Colour: Operating Temperature Range: Flammability: Thermal Cycling (MIL-1-46058C): Coefficient of Expansion: Dielectric Strength: Dielectric Constant: Surface Insulation Resistance: Dissipation Factor @ 1MHz, 25°C: Moisture Resistance (MIL-1-46058C):	Colourless -65°C to +125°C UL94 V-0 Meets requirements 130ppm 45kV/mm 2.5 1 x 10 <sup>15</sup> Ω 0.01 Meets requirements

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All information is given in good faith but without warranty. Properties are given as a guide only and should not be taken as a specification.

Electrolube cannot be held responsible for the performance of its products within any application determined by the customer, who must satisfy themselves as to the suitability of the product.

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Certificate No. FM 32082

<u>Description</u>	<u>Packaging</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>HFAC Conformal Coating</u>	5 Litre	HFAC05L	24 Months
<u>Medium Dry Thinners</u>	5 Litre	MDT05L	24 Months
<u>Removal Solvent</u>	200 ml Aerosol	ULS200D	36 Months
	400 ml Aerosol	ULS400D	36 Months
	1 Litre Bulk	ULS01L	72 Months
	5 Litre Bulk	ULS05L	72 Months
	25 Litre Bulk	ULS25L	72 Months

### **Directions for Use**

HFAC can be sprayed, dipped or brushed. The thickness of the coating depends on the method of application (typically 40 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for its application. As is the case for all solvent based conformal coatings, adequate extraction should be used (refer to MSDS for further information).

Substrates should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is achieved and to prevent flux residues causing corrosion on the PCB. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology, which all produce results within Military specification.

### **Spraying – Bulk**

HFAC needs to be diluted with the appropriate thinner (MDT) before spraying. The optimum viscosity to give coating quality and thickness depends on the spray equipment and conditions, but normally a dilution ratio of 2.5:1 (HFAC:MDT) is required. Suitable spray viscosity is typically 40-70 cPs. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed before use.

HFAC is suitable both for use in manual spray guns and selective coating equipment. The selected nozzle should enable a suitable even spray to be applied in addition to suiting the prevailing viscosity. The normal spray gun pressure required is 275 to 413 kPa (40 – 60 lbs/sq.inch). After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.

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## **Dip Coating**

HFAC has been formulated to a suitable viscosity for dip coating (360 mPa s @ 25°C). The coating material should be checked periodically using a viscometer or "flow cup" and MDT added as required to replace the solvent lost by evaporation and maintain the viscosity.

The board assemblies should be immersed in the dipping tank in the vertical position, or at an angle as close to the vertical as possible. Connectors should not be immersed in the liquid unless they are very carefully masked. Electrolube Peelable Coating Masks (PCM/PCS) are ideal for this application. Leave submerged for approximately 10 seconds until the air bubbles have dispersed. The board or boards should then be withdrawn slowly (1 to 2mm/s) so that an even film covers the surface. After withdrawing, the boards should be left to drain over the tank or drip tray until the majority of residual coating has left the surface. After the draining operation is complete, the boards should be placed in an air-circulating drying cabinet and left to dry.

## **Brushing**

Ensure that the coating material has been agitated thoroughly and has been allowed to settle for at least 2 hours at ambient temperature. When the brushing operation is complete the boards should be placed in an air-circulating drying cabinet and left to dry.

## **Inspection**

HFAC contains a UV trace, which allows inspection of the PCB after coating to ensure complete and even coverage; the stronger the reflected UV light, the thicker the coating layer is. UV light in the region of 375nm should be used for inspection.

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