

## CPL Clear Protective Lacquer

CPL is a general purpose coating designed to protect printed circuit boards from environmental attack. The high gloss properties of CPL also make it an ideal choice for over-coating applications where cosmetic appearances are a contributing factor. It is also suited for protecting ferrous metals from corrosion.

- High quality gloss finish; ideal for over-coating applications
- Cost effective coating with good resistance to humidity
- Does not contain a UV trace
- Suitable for applications requiring rework; cured coating can be removed with Electrolube ULS

<b>Approvals</b>	<b>RoHS Compliant (2015/863/EU):</b> <b>NATO Stock Numbers:</b>	<b>Yes</b> <b>8010998020506 (CPL05L)</b> <b>8010997774491 (CPL200H)</b>
<b>Liquid Properties</b>	Appearance: Density @ 20°C (g/ml): VOC Content: Flash Point: Solids content: Viscosity @ 20°C (mPa s): Touch Dry: Recommended Drying Time: Coverage @ 25µm:	Clear Pale Straw 0.86 (Bulk), 0.79 (Aerosol) 79% 12°C 21% 25 15-20 minutes 24 Hours @ 20°C 7m <sup>2</sup> per litre (Bulk), 1.3m <sup>2</sup> (200 ml Aerosol)
<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 (High Gloss) -50°C to +100°C Meets UL94 HB Meets approval 140ppm 45 kV/mm 3.5 1 x 10 <sup>12</sup> Ω 0.01 Meets approval

<u>Description</u>	<u>Packaging</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>CPL Conformal Coating</u>	200ml Aerosol	CPL200H	36 Months
	5 Litre Bulk	CPL05L	48 Months
<u>Conformal Coating Thinners</u>	1 Litre	DCT01L	36 Months
	5 Litre Bulk	DCT05L	36 Months
<u>Removal Solvent</u>	200ml Aerosol	ULS200D	36 Months
	400ml 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**

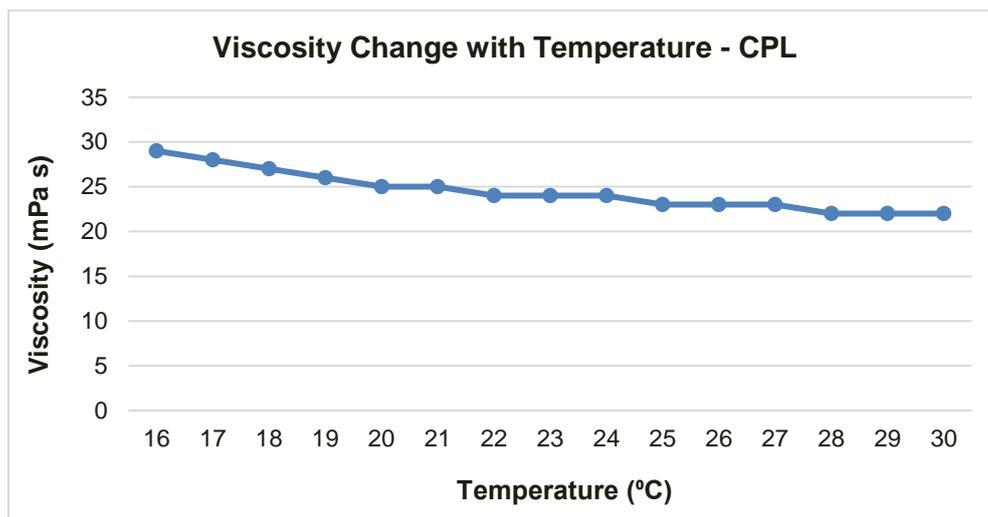
CPL can be sprayed, dipped or brushed. The thickness of the coating depends on the method of application (typically 25 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for the application of CPL. As is the case for all solvent based conformal coatings, adequate 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 possible. Also, all flux residues must be removed as they may become corrosive if left on the PCB. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology. Electrolube cleaning products produce results within Military specification.

### **Spraying – Bulk**

CPL is supplied with a viscosity of around 25mPa s at room temperature and therefore does not need to be thinned for spray application. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed. CPL 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 274 – 413 kPa (40 - 60 lbs/sq.inch). After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.



### **Spraying - Aerosol**

When applying CPL in aerosol form care must be taken to ensure the can is not shaken before use. Shaking the can will introduce excessive air bubbles and will give a poor coating finish.

The can should be held at 45° and 200mm from the substrate to be coated. The valve should then be depressed when the can is pointing slightly off target and moved at about 100mm / second across the target. To ensure the best coating results are achieved try to use a smooth sweeping motion with small overlap for successive rows.

To ensure penetration of the coating beneath the components and in confined spaces, spray the assembly from all directions to give an even coating. After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.

### **Dip Coating**

Ensure that the coating material in the container has been agitated thoroughly and has been allowed to stand for at least 2 hours for all the air bubbles to disperse.

Non acrylic conformal coating thinners (DCT) should be added periodically as the solvent evaporates to ensure the coating remains at a viscosity of between 20 – 30mPa s. The viscosity should be checked using a viscosity meter or "flow cup".

The board assemblies should be immersed in the CPL 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 2 s/mm) 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 stand for at least 2 hours. The coating should be kept at ambient temperature.

When the brushing operation is complete the boards should be placed in an air-circulating drying cabinet and left to dry.

Revision 3: November 2018