

CPL

Clear Protective Lacquer

DESCRIPTION

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.

READ ENTIRE TECHNICAL BULLETIN BEFORE USING THIS PRODUCT

FEATURES AND BENEFITS

- 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

APPROVALS

Standard	Status
RoHS Compliant (2015/863/EU)	Yes
NATO Stock Numbers	8010998020506 (CPL05L) 8010997774491 (CPL200H)
UL Approval	UL746C-QMJU2 - Meets Approval

PRODUCT INFORMATION

For available packaging sizes please visit:

electrolube.com

PHYSICAL PROPERTIES

Category	Results
Liquid Properties	
Appearance	Clear Pale Straw
Density @ 20 °C (g/mL)	
Bulk	0.86
Aerosol	0.79
VOC Content	79%
Flash Point (°C)	12
Solid Content	21%
Viscosity (mPa s @ 20 °C)	25
Touch Dry	15 to 20 minutes
Recommended Drying Time @ 20 °C	24 hours
Coverage @ 25 µm	
Bulk	7 m ² /L
Aerosol	1.3 m ² /L (200 mL)
Dry Film Coating	
Color	Colorless (High Gloss)
Operating Temperature Range (°C)	-50 to 100
Flammability	Meets UL94 HB
Dielectric Strength (kV/mm)	45
Dielectric Constant	3.5
Surface Insulation Resistance	1 x 10 ¹² Ω
Thermal Cycling (MIL-1-46058C)	Meets Approval
Coefficient of Expansion (ppm)	140
Dissipation Factor @ 1MHz @ 25 °C	0.01
Moisture Resistance (MIL-1-46058C)	Meets Approval

APPLICATION GUIDELINES

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).

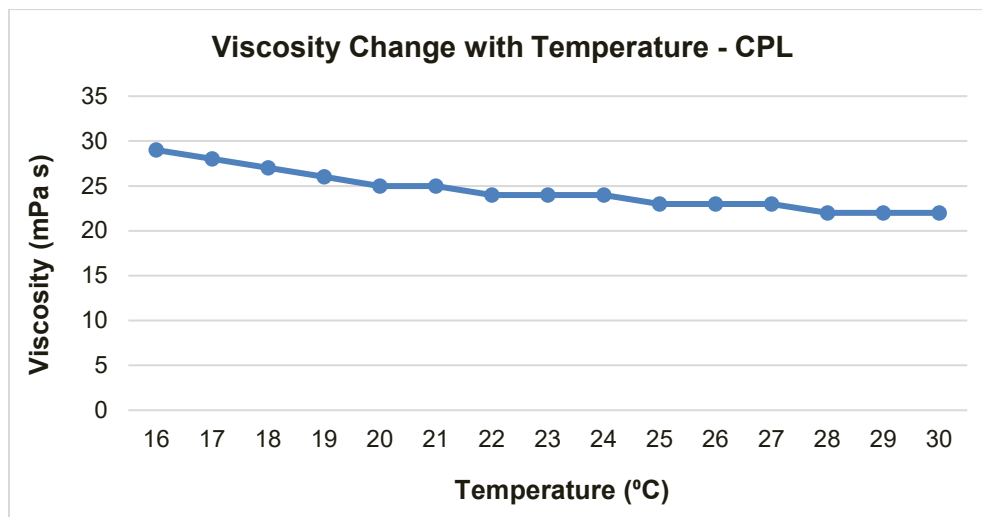
Substrates should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is possible. Also, all flux residues must be removed as they may become corrosive if left on the PCB. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology. Electrolube cleaning products produce results within Military specification.

TYPICAL PRODUCT APPLICATION

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 to 413 kPa (40 to 60 lb./sq.in.). 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 200 mm from the substrate to be coated. The valve should then be depressed when the can is pointing slightly off target and moved at about 100 mm/s 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 to 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.

ADDITIONAL INFORMATION

Shelf Life

Description	Shelf Life
CPL Conformal Coating	
Aerosol	36 Months
Bulk	48 Months
Conformal Coating Thinners	36 Months
Removal Solvent	
Aerosol	36 Months
Bulk	72 Months

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available.**

CONTACT INFORMATION

To confirm this document is the most recent version, please contact
TechnicalSupportTeam@hkw.co.uk
www.electrolube.com

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE . Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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