

## WBP

### Aquacoat Plus – Aqueous Conformal Coating

WBP is a water based conformal coating specifically formulated for the protection of electronic circuitry. Designed for application via dipping, WBP offers the ideal combination of a high specification coating with very low VOC emissions.

- Higher viscosity version; formulated for use in dipping applications
- Environmentally friendly coating due to very low VOC emissions; reduced production costs
- Eliminates the use of hazardous solvents and is NMP free; significantly reduces operator risks
- Contains a UV trace; ensures quality of coating by visual inspection

#### Approvals

**RoHS Compliant (2015/865/EU):**  
**MIL Approval (MIL-1-46058C):**  
**IPC-CC-830:**

**Yes**  
**Meets approval**  
**Meets approval**

#### Liquid Properties

Appearance:	White/Off-White
Density @ 20°C (g/ml):	1.03
VOC Content:	<10%
Flash Point:	>100°C
Solids content:	35%
Viscosity @ 20°C (mPa s):	180-220
Touch Dry:	25-35 minutes
Recommended Drying Time:	24 hours @ 20°C, or 2 hours 20°C followed by 2 hours @ 60°C
	*Optimum properties achieved after 7 days
Coverage @ 25µm:	14 m <sup>2</sup>

#### Dry Film Coating

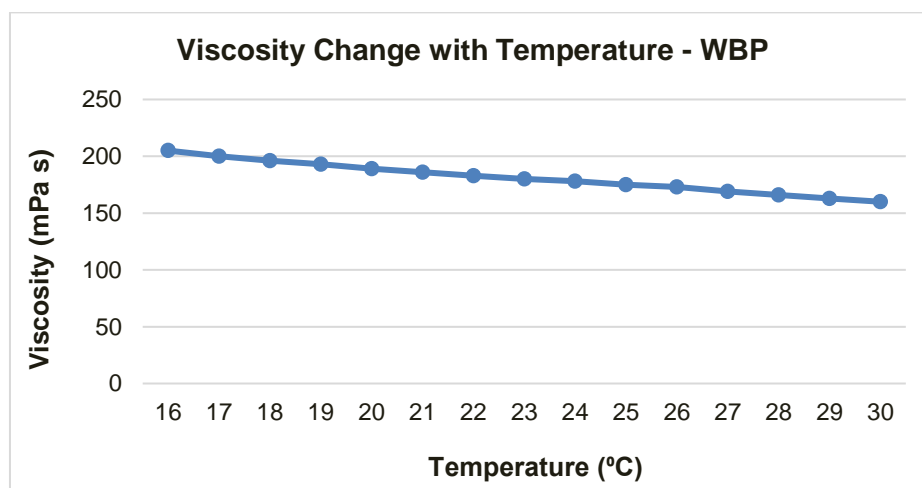
Colour:	Clear transparent
Operating Temperature Range:	-60°C to +125°C
Flammability:	Meets UL94-V1
Thermal cycling (MIL-1-46058C):	Pass
Coefficient of Expansion:	125 ppm
Dielectric Strength:	50 kV/mm
Dielectric Constant:	2.6
Surface Insulation Resistance:	5 x 10 <sup>11</sup> Ω
Dissipation Factor @ 1MHz, 25°C:	0.03
Moisture Resistance (MIL-1-46058C):	Pass

<u>Description</u>	<u>Packaging</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>Water Based Conformal Coating</u>	5 Litre Bulk	WBP05L	12 Months
<u>Water Based Conformal Coating (Sprayable)</u>	5 Litre Bulk	WBP05LS	12 Months
<u>Deionised Water Thinners</u>	5 Litre	DEI05L	36 Months
<u>Conformal Coating Removal Gel</u>	1 Litre Bulk	CCRG01L	36 Months

### Directions for Use

WBP can be dipped or brushed. For spraying applications, please see WBPS. The thickness of the coating depends on the method of application (typically 25-75 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for the application of WBP.

Substrates should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion to the substrate is achieved. 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.



## **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.

Deionised water (DEI) should be used to keep the WBP coating at a suitable viscosity for dipping (180 – 300mPa s @ 20°C). DEI is added periodically as the solvent evaporates. The viscosity should be checked using a viscosity meter or "flow cup". The board assemblies should be immersed in the WBP 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) is ideal for this application.

Leave submerged for approximately 10 seconds until the air bubbles have dispersed. The board or boards should then be withdrawn very 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. 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.

## **Inspection**

WBP 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.

Revision 4: February 2020