

DCABL15S (Blue) Modified Alkyd Conformal Coating (SCC3)

DCABL15S is a transparent blue, modified alkyd conformal coating specifically designed for the protection of electronic circuitry. It has been formulated to meet the highest defence standards in both Europe and the United States. It meets approvals including the British Ministry of Defence (MOD) DEF-STAN 59/47 Issue 4, and Underwriters Laboratories UL746E-QMJU2.

- Transparent blue colour for cosmetic appearance and to aid coating inspection
- Heat-cured coating is resistant to many solvents used within aerospace and automotive industries
- Suitable for use at temperature extremes; very wide operating temperature range
- Can be reworked using specialist removal product, Electrolube CCRG

Approvals	RoHS Compliant (2015/863/EU): UL746E-QMJU2: DEF-STAN 59/47 (Issue 4): IPC-CC-830:	Yes Meets Approval Meets Approval Meets approval
Liquid Properties	Appearance: Density @ 20°C (g/ml): VOC Content: Solids Content: Viscosity (Ford No. 4 Cup): Touch Dry: Recommended Curing Schedule: Coverage @ 25 µm:	Transparent Blue 0.94 73% 27% 14-16 seconds 40 - 55 minutes 2 Hours @ 20°C Followed by: 2 - 24 Hours @ 90°C to 120°C (Maximum Solvent Resistance Achieved @ 120°C) 10.8 m ² per litre (Bulk)
Cured Film Coating	Colour: Operating Temperature Range: Flammability: Thermal Cycling (MIL 1-46058C): Coefficient of Expansion: Dielectric Strength: Dielectric Constant: Surface Insulation Resistance: Dissipation Factor @1 MHz, 25°C: Moisture Resistance (MIL-1-46058C):	Transparent Blue -70°C to +200°C Meets UL94 V-1 Meets approval 90ppm 90 kV/mm 3.95 @ 1 MHz 1 x 10 ¹⁵ Ω 0.037 Meets approval

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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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<u>Description</u>	<u>Packing</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>DCA Conformal Coating (Blue 15S)</u>	5 Litre Bulk	DCA20LBL15	48 Months
<u>Conformal Coating Removal Gel</u>	1 Litre Bulk	CCRG01L	36 Months

Directions for Use

Blue DCA 15S has been specifically designed for spray applications. The thickness of the coating depends on the application parameters (typically 25-75 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).

Although Blue DCA 15S displays outstanding adhesion to a variety of substrates, it is recommended that 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. In a 'no-clean' assembly process, the user should evaluate materials compatibility to ensure the combination of materials is fit for purpose and capable of withstanding the expected end-use environment. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology, which all produce results within Military specification.

Spraying – Bulk

Blue DCA 15S has been specifically formulated for use with selective coating machines using non-atomised or film-coating applicators. The material is supplied in a convenient, ready-to-use form, removing the need for on-site mixing and eliminating opportunities for error and variation in process. Optimum fluid pressures, valve settings, application speeds etc. will depend upon many factors and will vary from machine to machine and from circuit board to circuit board. Initial tests should be conducted to establish the correct parameters to achieve the desired coating application.

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 following the curing schedule (shown below). Brushing is only advised for touch-up or rework application.

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Drying Times and Curing Conditions

The properties gained from Blue DCA 15S are dependent on the curing schedule employed. It is essential that the coating be allowed a minimum of two hours drying time at ambient temperature prior to any heat curing. This is necessary to allow the solvent system to evaporate.

Ambient Ambient curing is via solvent evaporation only. Eliminating the heat curing step will reduce solvent resistance. Other properties, such as resistance to humid and corrosive environments, may also reduce but still meet the requirements of many industry standards. Coated boards should be left at room temperature for the solvent to evaporate; extraction is required in the curing area.

Commercial Most commercial users will gain satisfactory performance from this coating by curing for two hours at 90°C after the two-hour ambient cure. This will give limited resistance to solvents.

Military If the assemblies are to be used under conditions of high temperature or be exposed to extremes of thermal cycling, the coating should be cured for 12 hours at ambient followed by 24 hours at 90°C. For maximum solvent resistance cure at 2 hours at ambient following by 24 hours @ 120°C. This curing schedule will give resistance to the more aggressive solvents.

It is recommended that the coating be thoroughly cured on circuits, which have design areas of very high impedance that require adjustment after application.

Inspection

As a secondary inspection Blue DCA 15S 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 1: Feb 2018