

## DCRT High-Build Modified Conformal Coating (SCC3)

DCRT is a higher viscosity version of DCR, opaque red conformal coating. It is highly effective at covering lead ends and sharp areas as well as offering a very high level of protection even in harsh environments.

- High viscosity coating; provides a thicker coverage for difficult components and geometries
- Versatile protection; can be used to coat entire circuit boards or individual components
- Red opaque coating provides camouflage of PCB design
- Heat-cured coating is resistant to many solvents used within aerospace and automotive industries

<b>Approvals</b>	<b>RoHS-2 Compliant (2011/65/EU):</b> <b>IPC-CC-830:</b> <b>UL746C-QMJU2:</b>	<b>Yes</b> <b>Meets approval</b> <b>Meets approval</b>
<b>Liquid Properties</b>	Appearance: Density @ 20°C (g/ml): VOC Content: Flash Point: Solids content: Viscosity @ 20°C: Touch Dry: Recommended Curing Schedule*:  *(Maximum Solvent Resistance Achieved @ 120°C; Ambient Curing Schedule: 24 Hours @ 20-25°C) Coverage @ 25 µm:	Opaque Red 1.44 30% 27°C 70% Thixotropic 40 - 50 minutes 2 Hours @ 20°C followed by: 2 - 24 Hours @ 90°C to 120°C 17m <sup>2</sup> per litre
<b>Cured Properties</b>	Colour: Operating Temperature Range: Flammability: Thermal Cycling (IPC-CC-830): Dielectric Strength: Surface Insulation Resistance: Moisture Resistance (IPC-CC-830):	Opaque Red -70°C to +200°C Self-extinguishing Meets approval 90 kV/mm 1 x 10 <sup>15</sup> Ω Meets approval

<u>Description</u>	<u>Packaging</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>DCRT Conformal Coating</u>	5 Litre Bulk	DCRT05L	48 Months
<u>Conformal Coating Thinners</u>	1 Litre 5 Litre Bulk	DCT01L DCT05L	36 Months 36 Months
<u>Conformal Coating Removal Gel</u>	1 Litre Bulk	CCRG01L	36 Months

### **Directions for Use**

DCRT can be dipped or brushed. The thickness of the coating depends on the method of application (typically 50-75 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for the application of DCRT. 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. 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**

DCRT contains pigments which may settle to the bottom of the container during storage and these should be mixed in before use. 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.

Conformal Coating Thinners (DCT) should be used to keep the DCRT coating at a suitable viscosity for dipping; this will be dependent on the PCB to be coated and the required thickness and dipping speed, DCT 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 DCRT 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.

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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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Leave submerged for approximately 10 seconds until the air bubbles have dispersed. The board or boards should then be withdrawn slowly (1 to 2s/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 following the curing schedule (shown below).

### **Brushing**

DCRT contains pigments which may settle to the bottom of the container during storage and these should be mixed in before use. 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. Gently apply the coating with a good quality brush without leaving brush strokes. Avoid placing an excess of coating onto the board. When the brushing operation is complete, the boards should be placed in an air-circulating drying cabinet following the curing schedule (shown below).

### **Drying Times and Curing Conditions**

The properties gained from DCRT 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.

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