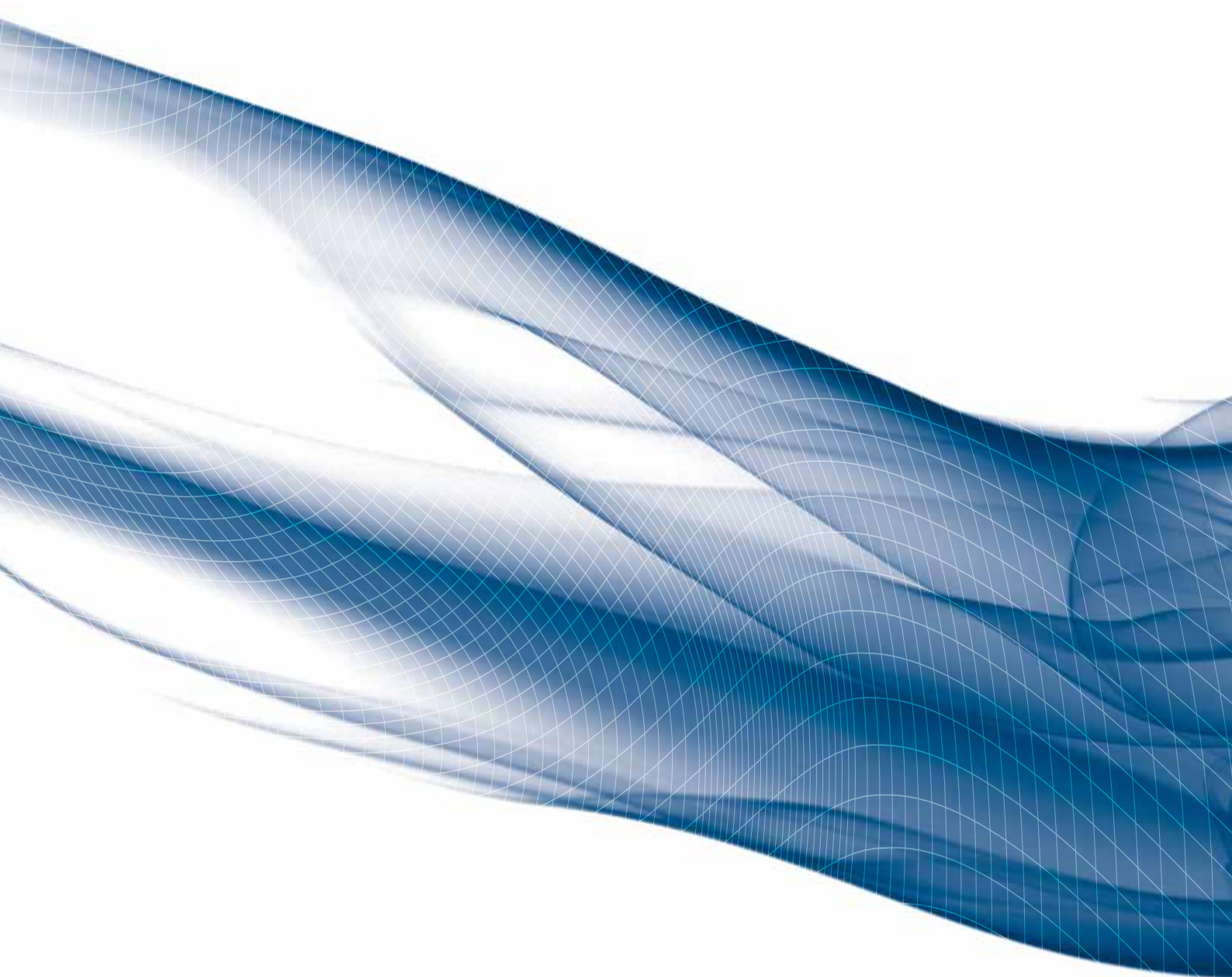


Conformal Coatings

Enhanced protection for enhanced PCB performance



ELECTROLUBE
THE SOLUTIONS PEOPLE

Conformal Coatings



- UL, MIL and IPC-CC-830 approved
- Solvent removable and solvent resistance coatings
- Acrylic, Silicone, Polyurethane and Hybrid Materials
- UV cure and water-based options available
- UV trace to aid inspection
- Thinners and masking products

Conformal coatings are designed to protect printed circuit boards and related equipment from their environment. Typically applied at 25-75µm, these coatings ‘conform’ to the contours of the board allowing for excellent protection and coverage, ultimately extending the working life of the PCB.

The use of conformal coatings is particularly important in automotive, military, aerospace, marine, lighting, industrial and green energy applications. Due to the rapid expansion of the electronics industry, conformal coatings are also finding their way into the domestic and mobile electronics industries, providing the necessary combination of high performance and reliability within a vast array of electronic devices.

Conformal coatings can be used in a wide range of environments to protect printed circuit boards from moisture, salt spray, chemicals and temperature extremes in order to prevent corrosion, mould growth and electrical failures, for example. The protection provided by conformal coatings allows for higher power and closer track spacing, in turn enabling designers to meet the demands of miniaturisation and reliability.

Electrolube is among the world’s foremost experts in the formulation and application of conformal coatings designed to meet international approvals (including European and American military specifications). The range of products currently available comprises acrylics, silicones, polyurethanes, hybrid chemistries and environmentally friendly options.

Electrolube can offer both transparent and pigmented coatings to improve or camouflage the appearance of printed circuit boards. The range also includes a number of ancillary products to complement the use of our conformal coatings, including thinners and removers, peelable coating masks and thixotropic materials for dam and fill applications.

The Product Range



DCA – SCC3 Conformal Coating

- High specification flexible modified silicone resin conformal coating
- UL746 approved
- May be ambient cured or heat cured for enhanced performance
- Excellent chemical and solvent resistance when heat cured
- May be soldered through for rework
- Extremely wide operating temperature range



DCA-FD – Fast-Dry DCA

- Touch dry in 20 minutes
- Higher solids content offering greater coverage
- Meets UL746 standard for conformal coating
- Excellent chemical and solvent resistance when heat cured
- May be soldered through for rework
- Extremely wide operating temperature range



DCR/DCRT/DCB

- Modified versions of DCA – SCC3 Range
- DCR is an opaque red version
- DCB is an opaque black version
- DCRT is a thickened opaque red product for covering difficult areas, such as lead ends
- Excellent for camouflaging commercially sensitive circuit board designs
- Meet UL746 standard for conformal coatings



AFA – Aromatic Free Acrylic Coating

- Excellent clarity, ideal for LED applications
- Free of aromatic solvents
- Meets UL746 and IPC-CC-830 industry standards
- Very fast touch-dry time
- May be removed with solvents such as Ultrasolve (ULS)
- UV trace to aid inspection



TFA – Toluene Free Acrylic

- Reduced hazard solvent-based acrylic coating, toluene-free
- Excellent clarity, ideal for LED applications
- IPC-CC-830 and UL746 approved
- Excellent protection in humid environments
- May be removed with solvents such as Ultrasolve (ULS)
- UV trace to aid inspection



HPA – High Performance Acrylic

- High performance flexible acrylic coating
- Approved to US MIL-1-46058C
- UV trace to aid inspection
- Excellent electrical properties
- Excellent clarity, ideal for LED applications
- May be removed with solvents such as Ultrasolve (ULS)



APL – Acrylic Protective Lacquer

- Excellent clarity, ideal for LED applications
- Offers excellent adhesion to all substrates
- Good temperature range and dielectric properties
- May be soldered through for rework
- UV trace to aid inspection
- May be removed with solvents such as Ultrasolve (ULS)



UVCL – UV Cure Conformal Coating

- VOC-free
- Exceptionally fast curing
- Low viscosity, ready to use for selective spray application
- Long shelf life
- Excellent flexibility, even after thermal cycling
- UV trace to aid inspection



FSC – Flexible Silicone Coating

- Solvent removable, modified silicone conformal coating
- May be removed with solvents such as Ultrasolve (ULS)
- High level of protection offered in humid environments
- May be soldered through for rework
- Very high surface insulation resistance
- Wide operating temperature range



WBP/WBPs – Aquacoat Plus

- Water-based coating, very low VOC content
- Excellent solvent resistance
- Resistance to mould growth
- N-Methyl pyrrolidone, isocyanate and phenol free
- Wide operating temperature range
- UV trace to aid inspection



LFCC – Lead Free Conformal Coating

- Compatible with lead free flux residues
- N-Methyl pyrrolidone, isocyanate and phenol free
- Wide operating temperature range
- UV trace to aid inspection
- Excellent electrical properties
- Excellent protection in humid environments



PUCAF – Aromatic Free Polyurethane Coating

- No aromatic content
- Fast touch-dry time
- Excellent adhesion to a wide variety of substrates
- Wide operating temperature range
- Resistant to mould growth
- UV trace to aid inspection



CPL – Clear Protective Lacquer

- General purpose coating for PCBs giving high quality glossy finish
- Ideal for protecting ferrous metals from corrosion
- Good resistance to humidity
- May be soldered through for rework
- No UV trace
- Also used as a top coat for protecting conductive lacquers



PUC – Polyurethane Coating

- Excellent abrasion resistance and mechanical strength
- Excellent adhesion under all climatic conditions
- UV trace to aid inspection
- High level of flexibility, even at low temperatures
- Excellent resistance to a wide range of chemicals and solvents
- Resistant to mould growth



TFCF – Fluorocoat Surface Modifier

- Thin-film coating, excellent coverage
- Reduces surface tension of substrates, protecting from a range of chemicals and solvents
- Superior moisture resistance
- Removed with light mechanical wear, allowing for assemblies to be coated without masking
- Ideal for connectors
- UV trace to aid inspection

Conformal Coatings

	DCA	DCB/DCR	FSC	WBP/WBPS	HPA	TFA	PUCAF	UVCL	TFCF
	Silicone Conformal Coating (SCC3)	Silicone Conformal Coating (SCC3)	Flexible Modified Silicone Coating	Aquacoat Plus/Sprayable	High Performance Acrylic	Toluene Free Acrylic	Aromatic-Free Polyurethane Coating	UV Cure Conformal Coating	Fluorocoat
Colours Available	Clear	Black/Red	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Viscosity (mPa s @ 20°C) (Bulk)	200	200/500	550	200/80	300	260	90	200	2
Flashpoint (°C) (Bulk)	27	27	27	None	-7	-7	27	>90	7
Solids (%) (Bulk)	37	47/60	50	35	35	36	37	100	2
Dielectric Strength (kV/mm)	90	90	80	50	45	45	60	27	90
Insulation Resistance (Ω)	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ²⁰	5 x 10 ¹¹	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	7 x 10 ¹²	1 x 10 ¹⁵
Temp. Range (°C)	-70 to +200	-70 to +200	-50 to +125	-60 to +125	-55 to +130	-65 to +125	-55 to +130	-65 to +135	-50 to +125
Touch Dry Time (Mins @ 20°C)	50-55	50-55	10-15	25-35	10-15	15-20	10	-	5
Cure Time (Hours @ 20°C)	2 @ 20°C & 2 @ 90°C*	2 @ 20°C & 2 @ 90°C*	24	24	24	24	24	-	24
Solvent Resistance	Excellent	Excellent	Good	Excellent	Good	Good	Good	Best	Good
Humidity Resistance	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Good	Excellent	Excellent
Mould Resistance	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Good
Thinners	DCT	DCT	DCT	DI Water	UAT	DCT	FTH	-	N/A
UV Trace	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Approvals	UL746		IEC61086		MIL-I-46058C	IPC-CC-830, UL 746		IPC-CC-830	

*The SCC3 range may also be cured at ambient temperature however the solvent resistance will be reduced.

**Please refer to the technical data sheet for more information on UV Curing Parameters.

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