ELECTROLUBE
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UVCL Gel
UV Cure Conformal Coating Gel

UVCL Gel is a single-part conformal coating gel, which cures rapidly on exposure to the correct dose of UV light. UVCL Gel is a gel version of UVCL, designed to provide higher coating thicknesses on difficult geometries and also prevent coating flow under critical components, such as BGA's. UVCL Gel has a highly effective, moisture initiated secondary cure mechanism to ensure curing in shadowed areas. UVCL is UL recognised as a conformal coating, achieving UL94 V-0

- Dual cure system; secondary moisture cure for full cure, even in shadow areas
- Eliminates the use of solvents; VOC-free and non-flammable coating
- No dilution required; high viscosity gel for difficult geometries
- Good protection in harsh environments, including high humidity, corrosive and chemical atmospheres

Approvals	**RoHS-2 Compliant (2015/863/EU):**	**Yes**
	UL746-QMJU2:	**UVCL: File Number E138403**
Liquid Properties	Appearance:	Pale Coloured Gel
	Base material:	Urethane acrylate
	Solids Content:	100%
	VOC content:	0%
	Flash Point:	>90°C
	Recommended Thickness:	2mm Maximum*

*Application dependent. Suitable thickness needs to be determined by the customer in end use application conditions.

Directions for Use

Substrates should be thoroughly cleaned before coating to ensure satisfactory adhesion to the substrate. All flux residues should be removed as they may become corrosive or interfere with adhesion if left on the PCB. Electrolube manufacture a range of cleaning products using both hydrocarbon solvent and aqueous technology.

Dispensing – Bulk

UVCL Gel is supplied in a ready to use viscosity for selective application, using a needle applicator. Due to the secondary moisture cure it is advised that all storage tanks are kept sealed from moisture during use to allow a longer pot life. Nozzles and applicator heads should be immersed in machine cleaner when not in use. Electrolube Industrial Machine Cleaner (IMC) is advised.

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Curing

The speed of UV cure depends on UV intensity, wavelength, applied coating thickness and height of components. The material will be touch-dry and can be moved further in production once the coating has seen the correct dose of UV light. Coating in shadow areas that does not receive the full UV dose will cure by the secondary moisture cure mechanism. The time for full cure depends on the thickness of the coating, humidity and temperature.

It is essential that the correct UV exposure is determined for each board, prior to any production, and it is recommended that a radiometer is used to ensure the dose is consistent. UVCL Gel has been designed to achieve optimum cured film properties through a simple application process. As such, UVCL Gel utilises a combination of wavelengths, with the majority dose of UVA, the most common form of UV light.

UVCL Gel has been designed to cure using standard 'H' or 'H+' type bulbs, running at 40% power with a conveyor speed of 1m/min. This provides UV irradiance and doses in the range:

	Irradiance (W/cm^2)			**Dose (J/cm^2)**		
	UVA	**UVB**	**UVC**	**UVA**	**UVB**	**UVC**
Min	0.6	0.6	0.15	1.5	1.5	0.5
Max	0.8	0.8	0.25	3.0	3.0	0.8

The UV doses above refer to parameters measured with an EIT UV Power Puck.

Further information on the application and curing of UVCL Gel is available on request.

Inspection

UVCL Gel contains a fluorescent dye, which allows 'blacklight' inspection of the PCB after coating, to ensure complete and uniform 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.

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