



Technical Data Sheet

TRV Tropicalised Varnish

Product Description

A flexible, fast drying transparent acrylic conformal coating for the protection of electronic circuitry formulated to meet the harsh environments found in tropical conditions.

Features

- Excellent adhesion to a wide variety of substrates.
- Fluoresces under UV light for ease of inspection.
- Wide operating temperature range.
- Can be soldered through without fear of highly toxic gases being produced (contains no isocyanates).
- Non-corrosive to Cadmium and Zinc plate (contains no phenols).
- Resistant to mould growth.
- Cured coating can be removed with Electrolube Ultrasolve (ULS).
- Excellent Dielectric properties

Approvals	MIL Approval (MIL-1-46058C): RoHS Compliant (2002/95/EC): IPC-CC-830	Meets approval Yes Meets approval
Liquid Properties	Appearance: Specific Gravity (Density) @ 20°C: VOC Content: Flash Point: Solids content: Viscosity @ 20°C: Touch Dry: Recommended Drying Time:	Pale Coloured Liquid 0.91 g/ml 65% -7°C 35% 300 - 350Centipoise 10-15 minutes 24 Hours @ 20°C 4 Hours @ 60°C 2 Hours @ 90°C
	Coverage @ 25µm :	14m ² per litre
Dry Film Coating	Colour: Operating Temperature Range: Flammability: Thermal Shock Test (MIL-1-46058C): Coefficient of Expansion: Dielectric Strength: Dielectric Constant: Insulation Resistance: Comparative Tracking Index Dissipation Factor @ 1MHz @ 25°C Moisture Resistance (MIL-1-46058C):	Colourless -55°C to +130°C Self-extinguishing (ASTM Method D56) Meets approval 130ppm 45 kV/mm 2.5 1 x 10 ¹⁵ Ohms/cm (DEF-STAN 59/47) >300 Volts 0.01 Meets approval

<u>Packaging</u>	<u>Description</u>	<u>Order Code</u>	<u>Shelf Life</u>
<u>TRV Conformal Coating</u>	500 ml Bulk	TRV500ML	48 Months
<u>Universal Acrylic Thinners</u>	5 Litre	UAT05L	72 Months
<u>Removal Solvent</u>	200ml Aerosol	ULS200D	36 Months
	400ml Aerosol	ULS400D	36 Months
	1 Litre Bulk	ULS01L	72 Months
	5 Litre Bulk	ULS05L	72 Months
	25 Litre Bulk	ULS25L	72 Months

Directions For Use

TRV can be sprayed, dipped or brushed. The thickness of the coating depends on the method of application (typically 25 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for the application of TRV. 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.

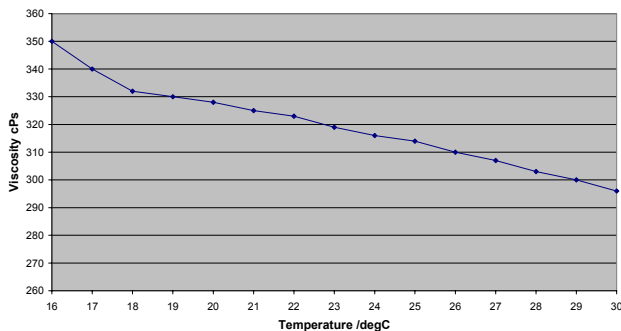
Spraying – Bulk

TRV needs to be diluted with the appropriate thinners (UAT) before spraying. The optimum viscosity to give coating quality and thickness depends on the spray equipment and conditions, but normally a dilution ratio of 2:1 (TRV to UAT) is required. Suitable spray viscosity is typically 50-80 centipoise. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed.

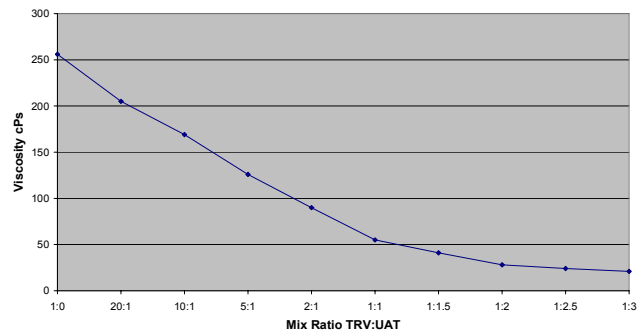
TRV is suitable both for use in manual spray guns and selective coating equipment.

The selected nozzle should enable a suitable even spray to be applied in addition to suiting the prevailing viscosity. The normal spray gun pressure required is 274 to 413 kPa (40 - 60 lbs/sq.inch). After spraying, the boards should be placed in an air-circulating drying cabinet and left to dry.

Viscosity Change with Temperature - TRV



Viscosity Chart TRV:UAT



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.

Universal Acrylic Thinners (UAT) should be used to keep the TRV coating at a suitable viscosity for dipping (200 – 300cps @ 20°C). UAT 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 TRV 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 Mask (PCM) 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 slowly (1 to 2 Seconds / 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 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

TRV 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.

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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.