



TECHNICAL DATA SHEET

RS 494-714 Modified Silicone Conformal Coating

RS 494-714 is a flexible and transparent modified silicone 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.

- Can be cured at ambient or elevated temperatures; optimum properties achieved by heat curing
- Heat-cured coating is resistant to many solvents used within aerospace and automotive industries
- Very wide operating temperature range
- Can be reworked

Approvals	RoHS-2 Compliant (2011/65/EU): UL746E: IPC-CC-830:	Yes Meets approval Meets approval
Liquid Properties	Appearance: Density @ 20°C (g/ml): Flash Point: Solids content: Touch Dry: Recommended Curing Schedule:	Clear Pale Straw 0.78 <23°C 27% 50 - 55 minutes 2 Hours @ 20°C followed by: 2 - 24 Hours @ 90°C
Cured Film Coating	Colour: Operating Temperature Range: Flammability: Dielectric Strength: Dielectric Constant: Insulation Resistance: Dissipation Factor (@1 MHz, 25°C): Moisture Resistance (IPC-CC-830):	Colourless -70°C to +200°C UL94 V-1 90 kV/mm 4.00 1 x 10 ¹⁴ Ohm 0.039 Meets approval
<u>Packaging</u>	<u>Order Code</u>	
200ml Aerosol	RS 494-714	

Directions for Use

The thickness of the coating depends on the method of application (typically 25-75 microns). Temperatures of less than 16°C or relative humidity in excess of 75% are unsuitable for the application of RS 494-714. 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.

**Spraying - Aerosol**

When applying RS 494-714 care must be taken to ensure the can is not shaken before use. Shaking the can will introduce excessive air bubbles and will give a poor coating finish. The can should be held at 45°, and 200mm from the substrate to be coated. The valve should then be depressed when the can is pointing slightly off target and moved at about 100mm/s across the target. To ensure the best coating results are achieved try to use a smooth sweeping motion with small overlap for successive rows.

To ensure penetration of the coating beneath the components and in confined spaces, spray the assembly from all directions to give an even coating. After spraying, the boards should be placed in an air-circulating drying cabinet following the curing schedule.

Drying Times and Curing Conditions

The properties gained from RS 494-714 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. 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 For maximum solvent resistance cure at 2 hours at ambient following by 24 hours @ 120°C.

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

RS 494-714 contains a UV trace, which allows inspection of the PCB after coating to ensure complete and even coverage.