



SVR 99 Silicon Removable Conformal Coating

FEATURES

SVR 99 is a repairable silicone conformal coating designed to protect printed circuit boards exposed to high humidity environments.

UV tracer is included within the coating to allow easy and reliable post-coating inspection. The stronger the reflected light, the thicker the coating layer.

TYPICAL PROPERTIES

Properties LIQUID	SVR 99 Conformal Coating
Nature	silicone
Colour	Clear translucent fluid
Non-volatile %	36 aprox
Flash Point	25°C
Viscosity @ 25°C	140 – 180 cSt
Specific Gravity @ 25°C	0.98

Properties CURED	SVR 99 Conformal Coating
Colour	Transparent
Dielectric Strength	90 KV/ mm
Electrical resistivity	$1 \times 10^{14} \Omega/ \text{cm}$
Temperature range	-50°C to 125°C
Flammability	Self-extinguishing
Dissipation factor @ 1MHz, 25°C	0.01
Isolation Resistance per MIL-I-46058C	$1 \times 10^{12} \Omega$
Rapid Temperature Variation test (-25° to 25° C, 100 cycles, 15 min plateau, 5°C/min)	pass
Thermal Shock (15 min @ -25°C to 15 min @ 50°C/ 50 cycles)	pass

Properties CURED (continue)	SVR 99 Conformal Coating
Dielectric withstanding Voltage per MIL-I-46058C	> 1500 V
SIR test (15 Hr/ 20° to 80°C / 90% RH)	pass
Moisture Resistance (10° to 80° C/ 95% RH/ 90 days)	pass
Salt fog (NF X41-002)	620 hrs

CHARACTERISTICS

- Good adhesion under high humidity conditions.
- Excellent surface resistivity.
- Excellent resistance to mould growth in tropical conditions, and to ultraviolet light.
- Good operating temperature range.
- Good dielectric properties
- Repairability - easily soldered through without fear of highly toxic gases being generated

SVR 99 Conformal Coating is designed to be removed with ABchimie SND (100% Ozone Friendly).

Properties	SVR 99 Conformal Coating
Removable	Yes
Solder-through repairability	Yes
Solvent and chemical resistance	No
Nature	Silicone
Shelf life	12 months, when stored in the original, unopened container
Transparent	Yes
Approvals	UL 94V0
Application options	Dipping, spray, brushing, compatible with a large range of dispensing equipments
Recommended coating thickness	25 – 50 microns

APPLICATION

SVR 99 Conformal Coating can be sprayed, dipped or brushed. The thickness of the coating depends on the method of application. Workshop temperatures of less than 16°C or RH above 75% are unsuitable for the application of SVR 99.

Pre-drying or better still, vacuum desiccation of the PCB will remove most of the moisture to assure best conformal coating protection

SVR 99 Conformal Coating contains a UV trace which allows inspection of the PCB after coating to ensure a complete and even coverage. The stronger the reflected light, the thicker the coating layer is.

Before coating, PCBs must be clean, dry and without moisture. The PCB being humidity sensor, it is important to remove it before coating. A pass in oven for 1 to 2 hours at 80 ° C is generally sufficient.

Cleaning

Boards should be thoroughly cleaned before coating. This is required to ensure that satisfactory adhesion of the coating to the substrate is achieved. Solder paste flux residues must also be removed as they may become corrosive when left on the PCBA.

In past years there have been major improvements in flux residues reliability and their compatibility with conformal coating. This improvement in electrochemical corrosion has been achieved using the Bono corrosion test as key technique to assure the chemical residue of the flux is chemically inert after soldering providing a reliable adhesion. This is a key reliability advantage for no-clean processes using conformal coating. Inventec offer ECOREL™ solder pastes compliant with Bono corrosion test and all SIR industry standards.

To clean equipments **SVR 99 Conformal Coating** not cured, it is recommended to the cleaning solvent SND.

Dip Coating application

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.

SVR99 Thinner (DVS) should be used to keep the **SVR99** coating at a suitable viscosity for dipping. DVS is added periodically as the solvent evaporates. The viscosity should be checked using a viscometer or "flow cup". The board assemblies should be immersed in the **SVR99** 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.

Leave submerged for about 1 minute until the air bubbles have dispersed. The board or boards should then be withdrawing very slowly (10 to 20 cm/mn) so that an even film covers the surface.

Spray application

Bulk **SVR99** needs to be thinned with SVR99 Thinner (DVS) before spraying. The optimum viscosity to give coating quality and thickness depends on the spray equipment and conditions but a starting point could be 2 parts coating to 1 part thinners. If bulk coating material has been agitated, allow to stand until air bubbles have dispersed. The nozzle of the spray gun requires to be selected to give an even spray to suit the viscosity of the coating material.

SVR99 is suitable both for use in manual spray guns and computer controlled airless spray equipment that only coats the required areas of the PCB, eliminating the need for masking.

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 and left to dry for 2 hours at room temperature prior to any heat curing.

Brushing application

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 avoiding leaving brush marks in order that the components and wiring are not affected.

Dry Times and Curing Conditions

SVR99 will dry in air within 4 to 12 hours at room temperature. This cure time can be reduced by the use of moderate heat. The coating should be tack free within 20 minutes. Any heat cure must be started after the coating has become tack free.

PACKAGING

SVR 99

5 Lt Bottle container or 400 ml Aerosol bottle (100% ozone friendly)

STORAGE

Twelve months from date of manufacture in unopened original container and stored under conditions of 5° to 35°C

HSE

Before using this product, please read the current product material safety data sheet (available through your sales or technical service representative) and the precautionary statement on the product package. Follow all applicable precautions and directions.

This data is based on information that the manufacturer believe to be reliable and offered in good faith. In no event will INVENTEC be responsible for special, incidental and consequential damages. The user is responsible to the Administrative Authorities (regulations for the protection of the Environment) for the conformity of his installation.

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