Technical Data Sheet

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Silfluo CC8102

Single-Component Acrylic Conformal Coating

Description

Silfluo CC8102 is a single-component modified acrylic conformal coating for printed circuit board (PCB) protection, formulated with low-toxicity solvents and incorporating a built-in fluorescent UV tracer for inspection under UV light (blacklight, 365 nm).

Upon solvent evaporation, CC8102 forms a continuous acrylic film providing moisture, salt spray, mildew, and corrosive gas resistance across a service temperature range of −40° C to +120° C. The cured film is reworkable using Silfluo Conformal Coating Remover, allowing component repair or replacement without mechanical damage to the PCB substrate.

Application

1. PCB Environmental Protection

Applied to PCBs in smart metering, household consumer appliances, and automotive electronics to protect against moisture ingress, salt spray (IEC 60068-2-52), mildew growth, and corrosive atmospheric gases (SO_2, H_2S, Cl_2). Volume resistivity of 8.5 × 10^{15} Ω·cm and dielectric strength of 30 kV/mm maintain electrical isolation between conductors under humidity and condensation exposure conditions.

2. UV Inspection

Built-in fluorescent UV tracer fluoresces under 365 nm UV blacklight, enabling automated optical inspection (AOI) or manual visual verification of coating coverage, film continuity, and absence of voids or holidays. Inspect immediately after tack-free time is reached (5 minutes at 23°C) before full cure to allow rework while the film is still solvent-removable with reduced effort.

Typical Uncured Liquid Properties:

Color	Colorless to light yellow liquid
Viscosity(mPa.s)	52
Specific gravity	0.83
Tack-Free Time (23℃, 80μm thickness)	5min

Cured Film Profile & Electrical Properties:

Full cure time(80μm thickness)	24 hours @ Room Temp 2 hours @ 70℃
Hardness(Shore A)	60
Adhesion (Cross-Cut Test)	Class 0 (Excellent / No detachment)
Elongation at Break(%)	20
Volume resistivity (ohm-cm)	8.5×10^{15}
Dielectric strength (KV/mm)	30

Surface resistance (ohm)	4.3×10^{14}
Using temperature (°C)	-40~120

Standard conditions: temperature 23±2°C, relative humidity 50±5%RH.

Application Guidelines

Surface Preparation

Clean PCB surfaces of all flux residues, dust, grease, and ionic contaminants before coating. Residual flux or ionic contamination beneath the cured film will cause adhesion failure and accelerated corrosion under humidity conditions. Use isopropanol (IPA) or a dedicated PCB cleaner; verify cleanliness by ion contamination test (IPC-TM-650 2.3.25 or equivalent) on critical assemblies.

Application Methods

CC8102 is suitable for spray, dip, and brush application. Maintain target wet film thickness of 80 μm to achieve published cured film properties; film thickness outside this range will alter tack-free time, electrical properties, and flexibility. Agitate container thoroughly before use to redistribute UV tracer uniformly.

Board Orientation

Maintain PCBs in a horizontal position during coating and throughout the initial flash-off period (minimum 10 minutes at 23°C) to prevent wet film flow, edge pooling, or thinning on vertical surfaces before solvent evaporation achieves tack-free state.

Cure Conditions

Allow 24 hours at room temperature (23°C, 50% RH) for full cure before exposing coated assemblies to service conditions. Accelerated cure at 70°C for 2 hours may be used in production; allow assemblies to cool to ambient temperature before handling or electrical testing.

Inspection and Rework

Inspect under 365 nm UV blacklight after coating and after cure. For rework, apply Silfluo Conformal Coating Remover to the area requiring repair; allow penetration time per remover instructions before mechanical removal. Recoat and re-inspect after rework.

Safety & Handling Precautions

Safety: Once fully cured, the coating is completely safe and non-toxic. However, the uncured liquid contains solvents. Avoid direct skin contact and prolonged inhalation of vapors. If splashed into the eyes, flush immediately with copious amounts of clean water and seek medical attention. Always refer to the Material Safety Data Sheet (MSDS) before use.

Packaging & Storage

Packaging: Available in 1kg and 5kg containers. (Customized industrial packaging available upon request).
Storage: Store in a cool, dry, and well-ventilated environment. Strictly avoid direct sunlight and ignition sources. Maintain storage temperatures between 5°C and 28°C.
Shelf Life: 12 months in original, unopened packaging.