Technical Data Sheet

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Silfluo LC-CC1390/92/94/97/98

Single-Component Silicone Conformal Coating

Description

Silfluo LC-CC1390 Series consists of five single-component, moisture-cure silicone conformal coatings available in solvent-borne (LC-CC1390, LC-CC1392, LC-CC1394, LC-CC1398) and solvent-free (LC-CC1397) versions, differentiated by solvent type, solid content, viscosity, and cured film hardness.
All grades cure via atmospheric moisture at room temperature or under accelerated heat, forming a silicone elastomer film with adhesion to metals, PCBs, and common electronic substrates. Each grade incorporates a UV fluorescent tracer for coverage inspection under 365 nm UV blacklight.
LC-CC1397 is solvent-free (98% solid content) and classified as non-dangerous goods for storage and transport; all other grades contain organic solvent (toluene or solvent oil No. 120) and are classified as dangerous goods.

Typical Technical Properties

Item	Silicone Conformal Coating				
	LC-CC1390	LC-CC1392	LC-CC1394	LC-CC1397	LC-CC1398
Appearance	Colorless or light yellow transparent liquid				
Solid Content (150 °C, 2h, %)	70±2	70±2	60±2	98%	89±2
Solvent	Toluene	Solvent oil No.120	Solvent oil No.120	None	Solvent oil No.120
Viscosity (25°C, cp)	600~1000	600~1000	400~800	1500-2500	600-1000
Surface Dry Time min (25°C, 60%RH, 1.25mm)	10~30	10~30	5~15	60	5~15
Complete Curing Time h (25°C, 60%RH, 1.25mm)	<24	<24	<24	<24	<24
Hardness (Shore A)	70~80	70~80	20~30	55~65	70~80

Grade Selection Guide

Grade	Key Differentiator	Primary Use
LC-CC1390	Toluene solvent; Shore A 70–80; 70% solid	General PCB protection where toluene solvent is acceptable
LC-CC1392	Solvent oil No. 120; Shore A 70–80; 70% solid	PCB protection with lower-aromatic solvent profile

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Grade	Key Differentiator	Primary Use
LC-CC1394	Solvent oil No. 120; Shore A 20–30; 60% solid; fast surface dry	Applications requiring soft, flexible film; vibration-resistant assemblies
LC-CC1397	Solvent-free; Shore A 55–65; 98% solid; non-dangerous goods	Enclosed or low-ventilation environments; automated dispensing; logistics-sensitive supply chains
LC-CC1398	Solvent oil No. 120; Shore A 70–80; 89% solid; fast surface dry	High solid content with fast processing; reduced VOC vs. LC-CC1390/1392

LC-CC1394 (Shore A 20-30) is selected where the cured film must accommodate mechanical vibration, thermal expansion mismatch, or flexible substrate movement without cracking. LC-CC1390/1392/1398 (Shore A 70-80) are selected for rigid PCB applications where film hardness and abrasion resistance are priorities. LC-CC1397 is the appropriate grade where solvent elimination is required by facility safety regulations or transport restrictions.

Protective Properties (All Grades)

- Moisture and humidity resistance: prevents condensation-induced leakage current between PCB conductors;
- Salt spray resistance: protects metal traces and component leads in marine, automotive, and outdoor electronics;
- Sulfur resistance: protects silver and copper conductors from H_2S and SO_2 tarnishing in industrial atmospheres;
- Anti-fungal: inhibits mold growth on PCB surfaces in high-humidity tropical environments;
- Corrosion resistance: seals metal surfaces from oxidizing gases;
- Dielectric insulation: maintains electrical isolation between conductors under environmental stress;
- Thermal cycling resistance: silicone elastomer film accommodates differential thermal expansion across the −40°C to +200°C service range without delamination or cracking;
- UV fluorescent tracer: visible under 365 nm UV blacklight for automated or manual coverage inspection;

Applications

LC-CC1390 Series is used for conformal coating of PCBs and electronic assemblies in the following industries and applications: consumer electronics and home appliances; smart metering and IoT devices; automotive electronics (engine control units, sensor modules); LED driver boards; aerospace and avionics assemblies; marine electronics; medical device circuit boards; precision communication equipment. Verify grade selection against substrate type, operating environment, and applicable standards (IPC-CC-830, MIL-I-46058C, or equivalent) before production qualification.

Application Guidelines

Surface Preparation

Clean PCB surfaces of all flux residues, ionic contaminants, dust, moisture, and grease before coating. Verify cleanliness by ion contamination test (IPC-TM-650 2.3.25 or equivalent) on critical assemblies. Residual contamination beneath the cured film causes adhesion failure and accelerated corrosion under humidity conditions.

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Application Methods

Brush, spray, dip, or automated dispensing. Apply a smooth, uniform film without sagging, pinholes, or skipped areas. For spray application of solvent-borne grades (LC-CC1390/1392/1394/1398), use in a ventilated spray booth with local exhaust ventilation and explosion-proof equipment.

Multi-Layer Application

Apply the second coat only after the first layer reaches tack-free state (10–30 minutes for LC-CC1390/1392; 5–15 minutes for LC-CC1394/1398; 60 minutes for LC-CC1397 at 25°C, 60% RH). Applying over a wet first coat traps solvent and inhibits through-cure.

Cure Conditions

Full cure at 25°C, 60% RH within 24 hours for all grades. Elevated temperature and relative humidity accelerate cure rate. Minimum recommended cure environment: 20°C, 40% RH. At relative humidity below 40% or temperatures below 15°C, extend cure time and verify full cure by Shore A hardness measurement before service.

Container Handling

Single-component moisture-cure product — reseal containers immediately after dispensing to prevent skinning and premature in-can cure. Use within one working session after opening where possible.

Inspection

Inspect coating coverage under 365 nm UV blacklight after surface dry time. Rework skipped areas or pinholes by brush application of additional material before full cure.

Masking

Mask connectors, test points, switch contacts, adjustment potentiometers, and heat sink mounting surfaces before coating. Remove masking after surface dry time to prevent adhesion of masking tape to the partially cured film.

Package & Storage:

In 200kg / iron drum or 20kg / iron drum, the packaging can be specified according to the needs of users.
Store at 0–30°C in a well-ventilated, low-temperature environment away from direct sunlight and ignition sources. Shelf life: 6 months from date of manufacture in original unopened containers. Material beyond shelf life may remain usable subject to re-testing — verify viscosity and cure performance (surface dry time, Shore A at 24h) before use in production.
LC-CC1397 is stored and transported as non-dangerous goods, the other grades as dangerous goods.

Safety and Handling

Solvent-borne grades (LC-CC1390/1392/1394/1398) contain flammable organic solvents — keep away from open flames, sparks, and heat sources during application and drying. Take anti-static precautions (avoid static-generating clothing, use grounded equipment) to prevent ignition in enclosed spray environments.
Apply solvent-borne grades in a well-ventilated area or with local exhaust ventilation. Avoid prolonged inhalation of solvent vapors and direct skin contact. Wear solvent-resistant gloves and eye protection.
LC-CC1397 (solvent-free) — no flammability precautions required for the liquid product; standard PPE applies.
In case of eye contact with any grade, flush immediately with clean water for 15 minutes and seek medical attention. Refer to SDS before handling, storage, and use.

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