Technical Data Sheet

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Silfluo LC-FC181/183

Advanced Fluorinated Electronic Coating

Description:

The Silfluo LC-FC181 / LC-FC183 Series represents a highly advanced, exceptionally reworkable fluorinated electronic coating system designed for high-reliability manufacturing.

Formulated to deposit an ultra-thin, nano-scale protective film, this fast-drying series provides unparalleled defense against water, moisture, damp-heat conditions, and corrosive elements. Its standout feature is its superb reworkability—engineers can easily solder directly through the coating or effortlessly remove it for component repair, drastically reducing maintenance downtime.

To meet diverse production inspection requirements, the series offers two specialized grades: LC-FC181 (Standard Clear) and LC-FC183 (UV Traceable, featuring a built-in fluorescent indicator for rapid inspection under black light). Built on a non-flammable, Zero ODP (Ozone Depletion Potential) fluorinated solvent, it delivers an outstanding eco-friendly profile (RoHS compliant) while doubling as a premium epilame (anti-migration barrier) for precision mechanical assemblies.

Typical Technical Properties:

Active Ingredient:	Premium Fluoropolymer
Appearance:	Colorless clear liquid
Carrier Solvent:	Fluorinated solvent
Solid Content (%):	2%, 5%, 10% (Customizable upon request)
Flash Point:	None
Boiling Point (°C) :	50 - 68

Cured Film Properties (By Grade)

Property	LC-FC18-2	LC-FC18-5	LC-FC18-10
Solid Content:	2.0%	5.0%	10.0%
Cured Film Color:	Colorless	Colorless	Colorless
Light Transmittance:	≥ 91%	≥ 91%	≥ 91%
Single-Coat Dry Film Thickness:	0.5 - 1.5 μm	1.5 - 2.5 μm	3 - 10 μm
Tack-Free Time (Ambient):	30s	1min	2min
Static Water Contact Angle:	≥ 118°	≥ 118°	≥ 118°
Static n-Hexadecane Contact Angle:	≥ 80°	≥ 80°	≥ 80°
Surface Free Energy (mN/m)	8 - 10	8 - 10	8 - 10
Adhesion (ASTM D3359)	5B	5B	5B
Melting Point	70 - 80°C	70 - 80°C	70 - 80°C
Thermal Stability (1% weight loss)	~ 260°C	~ 260°C	~ 260°C
Dielectric Constant:	3.1	3.1	3.1

Volume Resistivity:	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$
Surface Resistivity:	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$

Features

1. Highly Reworkable Design: Easily removed or soldered through, facilitating effortless circuit board repair, component replacement, and post-assembly modifications.
2. Dual Inspection Grades: Available in a standard clear finish (LC-FC181) and a specialized UV traceable grade (LC-FC183) for rapid, automated optical inspection (AOI) under ultraviolet light.
3. Ultra-thin, Nano-Scale Conformal Coating: Forms a highly reliable protective film without compromising electrical connectivity or thermal management.
4. Superior Repellency & Resistance: Delivers robust, long-lasting protection against water, moisture, damp-heat conditions, and rust/corrosion.
5. Rapid Room-Temperature Cure: Fast-drying formulation designed to optimize high-throughput manufacturing efficiency without thermal baking.
6. Outstanding EHS Profile: Non-flammable, non-hazardous, Zero ODP, and fully compliant with RoHS directives.

Coating Process

Suitable for spray coating, dip coating, roll coating, and blade coating.

Applications

1. PCBA & FPCA Shielding: Safeguards sensitive printed circuit boards and electronic components from aggressive condensation, dust, industrial oils, solvents, and corrosive gases.
2. Precision Anti-Migration (Epilame): Acts as a critical barrier to prevent the creeping and migration of lubricating oils in micro-motors and precision mechanical assemblies (e.g., high-end watches and optical cameras).
3. HDD Component Protection: Effectively shields Magnetoresistive (MR) heads in hard disk drives from lubricant transfer and particulate contamination.
4. Component Sealing: Ideal for the reliable environmental sealing and protection of precision micro-parts.

Packing

In 100g, 500g, 1kg, 25kg.

Safety and Storage

Keep in a cool, dry, and well-ventilated environment, strictly avoiding direct sunlight, heat, and ignition sources. The shelf life is 24 months from the date of manufacture when stored in original unopened containers. Classified as a non-hazardous substance for transport and handling. Storage beyond the shelf life does not necessarily mean the product is unusable; however, the properties required for the intended use must be thoroughly checked for quality assurance reasons prior to application.