Technical Data Sheet

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Silfluo LC-FC260

Fluorinated Electronic Coating with Yellow Visual Indicator

Description:

Silfluo LC-FC260 is a fluoropolymer-based electronic coating carried in a non-flammable, odorless fluorinated solvent, available in three solid content concentrations (2%, 5%, 10%) with customizable concentrations on request. The cured film retains a yellow tint visible under ambient light for a minimum of 30 days, enabling coating coverage verification by direct visual inspection without UV blacklight equipment -the defining functional difference from the LC-FC631/633 and LC-FC181/183 series.

Upon solvent evaporation, LC-FC260 deposits a yellow fluoropolymer film with dry film thickness of 1.0-3.5 μm (grade-dependent), static water contact angle ≥110°, surface free energy of 10-12 mN/m, and light transmittance ≥90%. Tg of 10-15° C and thermal stability to ~250° C (1% weight loss) define the service temperature boundaries of the cured film.

The fluorinated carrier solvent has no flash point, a boiling point of 50-68° C, zero ODP, and is RoHS compliant.

Typical Technical Properties:

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

Cured Film Properties (By Grade)

Property	LC-FC260-2	LC-FC260-5	LC-FC260-10
Solid Content:	2.0%	5.0%	10.0%
Cured Film Color:	Yellow	Yellow	Yellow
Light Transmittance:	≥ 90%	≥ 90%	≥ 90%
Single-Coat Dry Film Thickness:	1.0 - 1.5 μm	1.0 - 2.5 μm	2.0 - 3.5 μm
Tack-Free Time (Ambient)	30s	1min	2min
Static Water Contact Angle	≥ 110°	≥ 110°	≥ 110°
Static n-Hexadecane Contact Angle	≥ 75°	≥ 75°	≥ 75°
Surface Free Energy (mN/m)	10 - 12	10 - 12	10 - 12
Color Retention Time	At least 30 days	At least 30 days	At least 30 days
Adhesion (ASTM D3359)	5B	5B	5B
Glass Transition Temperature (Tg)	10 - 15° C	10 - 15° C	10 - 15° C

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Thermal Stability (1% weight loss)	~ 250° C	~ 250° C	~ 250° 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:	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$	$>10^{14}\Omega\cdot m$

Fluorinated Coating Series - Product Comparison

Dimension	LC-FC260	LC-FC631/633	LC-FC181/183	LC-FC130
Water contact angle	≥110°	≥110°	≥118°	≥110°
n-Hexadecane contact angle	≥75°	≥75°	≥80°	≥70°
Surface free energy (mN/m)	10–12	10–11	8–10	10–12
Thermal stability (1% wt loss)	~250°C	~260°C	~260°C	~190°C
Tg / melting point	Tg 10–15°C	Tg 5–10°C	Mp 70–80°C	Mp 25–30°C
Max single-coat thickness	2.0–3.5 μm	1.5–2.5 μm	3–10 μm	1.5–2.5 μm
Visual indicator	Yellow tint — ambient light	UV fluorescent (633 only)	UV fluorescent (183 only)	Not specified
Color retention	≥30 days	N/A	N/A	N/A

Coating Process

Suitable for spray coating, dip coating, roll coating, and blade coating. Use fluoropolymer-compatible equipment (stainless steel or PTFE-lined). For dip coating, control withdrawal speed to manage wet film uniformity. For spray coating, use local exhaust ventilation to control fluorinated solvent vapor concentration in the work area.

Applications

1. Visual Inspection Zones and Field-Serviceable Assemblies

Used where coating coverage must be verified by direct visual inspection without UV blacklight equipment, including in-line quality checks at assembly stations without UV inspection infrastructure, field service verification

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of coating integrity on deployed equipment, and acceptance inspection by non-specialist personnel. Yellow tint at ⩾90% light transmittance is visible on PCB surfaces under standard workshop or field lighting. Verify color visibility against specific PCB substrate color (green, blue, black soldermask) at target film thickness before production qualification.

2. PCBA and FPCA Protection

Applied to PCBs and flexible circuit assemblies as a thin conformal barrier against condensation, dust, industrial oils, solvents, and corrosive gases. Film thickness of 1.0 – 3.5 μm does not affect electrical connectivity at contact pads or connector pins. Tg of 10 – 15° C means the cured film is above glass transition temperature at ambient operating conditions (>15° C), maintaining elastomeric behavior during thermal cycling. Verify coating integrity after thermal cycling per IEC 60068-2-14 or equivalent before production qualification.

3. Precision Anti-Migration (Epilame)

Applied to surfaces adjacent to lubricated components in micro-motors, watch movements, and optical camera mechanisms to form a low-surface-energy barrier (10 – 12 mN/m) preventing capillary migration of lubricating oils beyond the lubrication zone. LC-FC260-2 is the recommended grade for this application. Note that the yellow tint of the cured film may be visible on transparent or lightly colored precision components — verify acceptability before adoption in optical assemblies.

4. Hard Disk Drive MR Head Protection

Applied to magnetoresistive read heads to prevent lubricant transfer and particulate contamination. Film thickness control is critical — use LC-FC260-2 and verify dry film thickness by ellipsometry or profilometry on production samples.

5. Precision Micro-Part Sealing

Used for environmental sealing of precision micro-parts and miniaturized sensors where conventional conformal coating film thicknesses are incompatible with component dimensional tolerances. Thermal stability to ~250° C allows use in assemblies passing through reflow soldering profiles after coating.

Packing

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

Safety and Storage

Keep in a cool, dry, and well-ventilated environment, 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.

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