Technical Data Sheet

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Silfluo LS-53C

PFPE Modified Acrylic Compound

Description:

Silfluo LS-53C is a perfluoropolyether (PFPE) modified acrylic compound with 30% active content, combining the ultra-low surface energy and slip characteristics of PFPE fluoropolymer segments with the film-forming versatility and resin compatibility of acrylic chemistry.

The PFPE segments migrate to the coating surface during cure, creating a fluorine-enriched interface layer of very low surface energy — imparting extreme hydrophobicity, oleophobicity, anti-smudge, and easy-clean performance — while the acrylic backbone ensures permanent covalent incorporation into the coating matrix without plasticizer-type migration or bleed-out over time.

Designed for optical coatings, anti-fingerprint films, consumer electronics surface protection, and functional engineering plastic hardcoats where long-term surface cleanliness, optical clarity, and durability are simultaneously required.

Typical Technical Properties:

Silfluo Code:	LS-53C
Chemical Name:	Perfluoropolyether modified acrylic compound
Synonyms:	PFPE modified acrylic compound
Appearance:	Translucent liquid
Effective Content:	30
Dosage (%):	0.1~10

Features

1. Ultra-low surface energy — dual hydrophobicity and oleophobicity

PFPE segments oriented at the coating surface deliver contact angles typically >100° for water and >70° for oils and fingerprint sebum, preventing adhesion of water droplets, oily contaminants, and fingerprint residues. This dual repellency profile is characteristic of PFPE chemistry and distinguishes LS-53C from silicone or hydrocarbon-based slip additives that provide hydrophobicity but not oleophobicity.

2. Covalent PFPE-acrylic architecture — permanent performance

The acrylic backbone co-cures or co-polymerizes with the coating resin matrix, permanently anchoring the PFPE segments without plasticizer-type migration to the substrate interface or loss during cleaning and weathering. Long-term anti-smudge and easy-clean performance is maintained through repeated cleaning cycles and UV exposure.

3. Anti-smudge and easy-to-clean surface tactile quality

Low coefficient of friction (COF) surface created by PFPE enrichment provides a smooth, frictionless tactile feel on high-touch surfaces — critical for smartphone screen protectors, optical lenses, and electronic device casings where both anti-fingerprint performance and user haptic experience are specified.

4. Broad resin compatibility — optical clarity preserved

Acrylic backbone provides compatibility with UV-curable acrylate, PMMA, PC, and PET coating systems at recommended dosage levels. Phase separation and haze at optimized loading levels are minimized; verify optical clarity in the specific formulation and substrate combination.

5. Chemical stability and weatherability

PFPE segment — fully fluorinated polyether backbone — exhibits exceptional resistance to UV degradation, aggressive cleaning agents, solvents, and harsh environmental exposure, maintaining

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surface performance integrity over the product service life.

Applications

1. Anti-smudge and anti-fingerprint coatings — displays and optical films

Formulated into UV-curable AF transparent coatings for smartphone screen protective films, LCD/OLED display surfaces, optical lenses, and optical discs. PFPE surface enrichment provides fingerprint repellency, easy wipe-clean performance, and maintained optical clarity under repeated contact and cleaning.

2. Consumer electronics and appliance surface protection

Used as anti-graffiti and anti-fouling topcoat additive for external casings of white goods and consumer electronics. Protects surfaces from permanent ink, stains, and accelerated wear under daily-use contact conditions.

3. Engineering plastic hardcoats — PC, PMMA, PET

Incorporated into surface treatment hardcoats for polycarbonate, PMMA, and PET substrates to improve surface slip (COF reduction), chemical resistance, and long-term weathering durability without compromising optical transmission or haze values.

Packing

In 1kg fluorinated bottle, 25kg pail and 200kg drum.

Safety and Storage

Keep in a cool, dry, and well-ventilated environment, strictly avoiding direct sunlight, heat, and ignition sources. The shelf life is 12 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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