Technical Data Sheet

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Silfluo LF-VF11

Vinyl Terminated Fluorinesilicone Fluid

Description:

Silfluo LF-VF11 is a series of vinyl-terminated fluorosilicone (FVMQ) polymers, available in multiple grades differentiated by fluorine content, density, and refractive index, with viscosity range 50–50,000 mPa • s and custom viscosity grades available on request.

Terminal vinyl groups on both chain ends react with Si–H groups on hydrogen-containing fluorosilicone crosslinkers (LF-HF12 series) under Pt catalysis via hydrosilylation, forming a cured fluorosilicone elastomer network with no volatile by-products and zero shrinkage on cure.

The fluorosilicone backbone combines the trifluoropropyl side-chain chemistry of FVMQ with the siloxane backbone flexibility of silicone, yielding a cured elastomer with fuel, oil, and solvent resistance characteristic of fluoropolymers alongside the low-temperature flexibility and wide service temperature range of silicone elastomers — a combination not achievable with either fluoropolymer or standard silicone alone.

Typical Technical Properties:

Silfluo Code:	LF-VF11-XX	LF-VF11-XX	LF-VF11-XX	LF-VF11-XX
Chemical Name: Synonyms:	Vinyl-Terminated Fluorosilicone Fluid Vinyl Dimethylsilyl Terminated Fluorosiloxane; Vi-FVMQ Base Polymer			
Appearance:	Colorless to yellowish transparent liquid			
Viscosity (25°C, mPa.s)	50-50000			
Refractive Index(25°C, nD25)	1.40	1.38	1.38	1.38
Density (25°C, g/cm^3)	0.99	1.15	1.16	1.24
Vinyl Content, mol%	Vinyl group content corresponding to each viscosity of terminal vinyl silicone oil			
Volatile (%/ 200°C, 4h)	<5			
PH Value	6.0~7.5			
Flash Point (°C)	>240			

* Products that can customize other viscosity according to customer requirements.

Applications:

1. Aviation and Automotive Fuel-Contact Sealing Components

Used as base polymer in Pt-catalyzed fluorosilicone elastomer formulations for O-rings, gaskets, diaphragms, and fuel system components with continuous contact with aviation jet fuels (Jet-A, JP-8), automotive fuels, engine oils, and hydraulic fluids at service temperatures from −60° C to approximately 200° C. Trifluoropropyl side chains on the backbone reduce swelling in hydrocarbon and polar organic solvents relative to standard PDMS elastomers. Select grade by fluorine content (density) based on target fluid resistance requirements; verify swell percentage in specific fuel/fluid media via immersion testing per

ASTM D471 or equivalent.

2. Two-Part Addition-Cure Liquid Fluorosilicone Rubber (F-LSR)

Used as base polymer and reactive diluent in two-part Pt-catalyzed F-LSR systems crosslinked with LF-HF12. Addition cure eliminates moisture dependency, enabling deep-section cure in thick molded parts and potting assemblies without void formation. Calculate Si－H to vinyl molar ratio based on vinyl content (mol%) of the LF-VF11 grade and hydride content of LF-HF12; target ratio typically 1.0－2.0:1. Verify cure profile, post-cure hardness, elongation, and fuel resistance via elastomer slab testing before production qualification.

3. Chemical-Resistant Electronic Potting and Protective Coatings

Used in potting compounds and protective coatings for sensors, circuit boards, and electronic assemblies exposed to corrosive industrial or automotive fluids. Fluorosilicone network resists fluid ingress and maintains dielectric properties under chemical exposure conditions where standard PDMS-based potting compounds would swell or degrade. Confirm compatibility with specific fluid media and service temperature via immersion and thermal cycling testing on cured specimens.

Package &Storage:

In 5kg, 25kg and 250kg drum

Keep in cool, dry and ventilated place. This product should be neutral to avoid contact with acidic and alkaline substances. Keep in unopened containers, shelf life is 18 months from the date of production. It is shipped as non-hazardous substance. Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.