Technical Data Sheet

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Silfluo LF-HF12

Hydrogen-containing Fluorosilicone Fluid

Description:

Silfluo LF-HF12 is a series of Si－H functional fluorosilicone polymers combining trifluoropropyl-bearing fluorosiloxane units with reactive silicon-hydrogen (Si－H) groups, used as crosslinkers in Pt-catalyzed addition-cure fluorosilicone elastomer systems.

The fluorosiloxane backbone provides resistance to hydrocarbon oils, fuels, and polar and non-polar solvents; the Si－H groups undergo hydrosilylation with vinyl-functional fluorosilicone base polymers under Pt catalysis to form the cured crosslinked network.

Four grades cover two structural types — methyl-terminated (LF-HF121, LF-HF122: pendant Si－H) and end-and-side combined (LF-HF12A, LF-HF12B: terminal + pendant Si－H) — at varying hydrogen contents, allowing selection based on required crosslink density, cure rate, and network topology.

Typical Technical Properties:

Silfluo Code:	LF-HF12-1	LF-HF12-2	LF-HF12A	LF-HF12B
Chemical Name:	Methyl end-capped hydrofluorosilicone oil		End side hydrofluorosilicone oil	
Appearance	Colorless to yellowish transparent liquid			
Viscosity (25°C, mPa.s)	30~100	30~100	30~50	30~50
Hydrogen Content %	0.20	0.70	0.40	0.20
Specific Gravity (25°C, g /cm3)	1.07±0.02		1.05±0.02	
Refractive Index(25°C, nD25)	1.390±0.01			
Volatile (% / 200°C, 4h)	<5			
Flash Point (°C)	>230			

* Can customize the production of hydrogen -containing silicone oil according to the requirements.

Applications:

1. Crosslinker for Addition-Cure Liquid Fluorosilicone Rubber (F-LSR) and Solid Fluorosilicone Elastomers

Used as the Si－H crosslinker component in Pt-catalyzed addition-cure F-LSR and solid fluorosilicone rubber formulations. Si－H groups react with vinyl-terminated or vinyl-containing fluorosilicone base polymers to form the cured fluorosilicone network. Fluorosiloxane backbone in the crosslinker contributes additional fluorine content and chemical resistance to the cured elastomer. Si－H to vinyl stoichiometry, grade selection (H content and Si－H position), and catalyst level determine mechanical properties, crosslink density, and cure profile. Avoid contact with Pt catalyst inhibitors (sulfur, tin, phosphorus, amine compounds).

2. Fluorosilicone Potting Compounds and Electronic Encapsulants

Used as curing component in fluorosilicone potting compounds for protection of electronics in automotive

(under-hood), aerospace, and industrial environments requiring resistance to fuel, hydraulic fluid, and chemical exposure at temperature extremes.

3. Fluorosilicone Release Coatings

Used in fluorosilicone release coating formulations providing low release force against aggressive silicone pressure-sensitive adhesives (PSAs) and other high-tack substrates. Fluorosiloxane backbone lowers surface energy of the cured coating relative to standard silicone release coatings.

4. Oleophobic and Hydrophobic Surface Treatment

Under metal salt catalysis at low temperature, Si－H groups condense with surface hydroxyl groups on rubber, fabric, glass, ceramics, paper, leather, and metal substrates, depositing a durable oleophobic and hydrophobic fluorosilicone film. Ensure adequate ventilation — hydrogen gas is released during condensation with hydroxyl surfaces.

Package &Storage:

In 5kg, 25kg and 50kg drum

Keep in cool, dry and ventilated place. Keep in unopened containers, shelf life is 12 months from the date of production. 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.