Technical Data Sheet

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Silfluo LF-H101S

Side-H Silicone Oil

Description:

Silfluo LF-H101S is a methyl-terminated methylhydrogen-dimethylsiloxane copolymer (CAS 68037-59-2) with reactive Si－H groups located exclusively on pendant side-chain positions along the backbone, with methyl groups at both chain termini.

The methyl-terminated, pendant-only Si－H architecture eliminates chain-end reactivity, ensuring all hydrosilylation occurs at lateral positions — providing uniform comb-type side-chain grafting without terminal interference and allowing precise control of grafting site distribution along the backbone.

Viscosity (10－1,000 mPa·s) and hydrogen content (0.03－1.2 wt%) are independently customizable, enabling tuning of backbone length, reactive site density, and inter-site spacing for specific grafting or crosslinking applications.

Typical Technical Properties:

Silfluo Code:	LF-H101S
Chemical Name:	Methyl Terminated, Pendant Hydrogen Silicone Fluid
Synonyms:	Polymethylhydrogensiloxane-Dimethylsiloxane Copolymer; Side-H Silicone Oil
Molecular Formula:	$(CH_3)_3SiO[(CH_3)HSiO]n[(CH_3)_2SiO]mSi(CH_3)_3$
Appearance	Colorless transparent liquid
CAS NO.:	68037-59-2
Viscosity (25°C, mpa.s)	10-1000
Hydrogen Content, wt%	0.03 ~ 1.2 (can be customized)
Density (25°C):	0.98-1.00
Volatiles(%):	⩽1.5
pH Value	6-7

Various viscosity and hydrogen content can be customized.

Parameter	Range	Effect
Hydrogen content	0.03–1.2 wt%	Controls grafting site density and crosslink density
Viscosity	10–1,000 mPa·s	Controls backbone length and inter-site spacing
n:m ratio (MH:DMS units)	Adjustable	Determines average distance between reactive Si–H sites

Applications:

1. Comb-Type Modified Silicone Synthesis

Used as backbone for Pt-catalyzed hydrosilylation grafting of allyl- or vinyl-functional organic side chains

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(polyether, epoxy, aralkyl, long-chain alkyl) to produce comb-structure modified silicone fluids. Methyl termination eliminates chain-end reactivity, ensuring grafting occurs exclusively at pendant sites and producing well-defined comb architecture. Lower H content grades (0.03–0.3 wt%) are suited to grafting bulky side chains where high Si–H density would cause steric crowding between adjacent grafted groups.

2. Polyurethane Foam Stabilizer and Agrochemical Penetrant Intermediates

Used as the Si–H reactive backbone for synthesizing polysiloxane-polyether copolymer PU foam stabilizers (by hydrosilylation with allyl-terminated polyethers) and trisiloxane-based super-spreading agricultural silicone surfactants. Pendant-only reactivity and customizable H content allow precise control of polyether graft density and HLB balance in the final surfactant product.

3. Addition-Cure LSR and Silicone Gel Crosslinker

Used as crosslinking agent in Pt-catalyzed LSR, electronic encapsulants, and silicone gels. Pendant Si–H configuration and adjustable H content allow independent control of crosslink density, gel point, elongation, and mechanical strength in the cured network. Avoid contact with Pt catalyst inhibitors (sulfur, tin, phosphorus compounds, amines).

4. Surface Hydrophobing Agent

Applied neat or in solution to glass, ceramics, leather, paper, cement, and marble. Pendant Si–H groups undergo dehydrogenative condensation with surface hydroxyl groups under acid or metal salt catalysis, depositing a hydrophobic siloxane film. Hydrogen gas is released during condensation with hydroxyl surfaces — ensure adequate ventilation during application.

5. Dry Powder Anti-Caking Treatment

Used as moisture-proof, anti-caking surface coating for dry chemical fire extinguishing powders, maintaining long-term flowability and moisture resistance in storage.

Grade	Termini	Pendant Si-H	H Content	Network Topology	Primary Use
LF-H101H	Trimethylsilyl	High density	≥1.5 wt%	Dense 3D	LSR crosslinker; hydrophobing
LF-H101L	Trimethylsilyl	Diluted	0.1–1.5 wt%	Controlled density	Soft LSR; bulky grafting
LF-H101S	Trimethylsilyl (methyl)	Pendant only	0.03–1.2 wt%	Comb-type	Grafting backbone; PU foam stabilizer
LF-H101T	Si-H terminated	None	0.009–0.80 wt%	Linear extension	ABA block copolymer; chain extension
LF-H101TS	Si-H terminated	Yes	0.28–1.0 wt%	Terminal + pendant — combined	High-density fast-cure LSR; PSA; release coating

Package &Storage:

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In 50kg, 200kg drum and 1000kg IBC.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 12 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.

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