Technical Data Sheet

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Silfluo LF-H101TS

Terminal & Side-H Silicone Oil

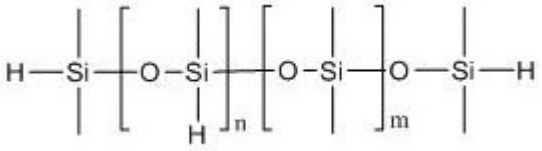
Description:

Silfluo LF-H101TS is a hydride-terminated methylhydrosiloxane-dimethylsiloxane copolymer (CAS 69013-23-6) combining Si－H groups at both chain termini and on pendant side-chain positions within the same polymer backbone.

The dual Si－H architecture provides two distinct reaction modes simultaneously under Pt catalysis: terminal Si－H groups extend chains linearly, contributing network flexibility; pendant Si－H groups create multi-directional crosslink nodes, increasing network density and mechanical strength. The combined effect produces higher crosslink density and faster cure than either terminal-only (LF-H101T) or pendant-only (LF-H101S, LF-H101H) fluids used alone.

Two standard grades are available: LF-H101TS-5 (low viscosity, high H content) and LF-H101TS-100 (medium viscosity, lower H content); additional viscosity and hydrogen content combinations are customizable on request.

Typical Technical Properties:

Silfluo Code:	LF-H101TS-5	LF-H101TS-100
Chemical Name:	Hydride-Terminated Methylhydrosiloxane-Dimethylsiloxane Copolymer	
Synonyms:	Terminal & Side-H Silicone Oil; Telechelic and Pendant Hydride Fluid	
Appearance	Colorless transparent liquid	
CAS NO.:	69013-23-6	
Molecular Formula:	$H(CH_3)_2SiO[(CH_3)HSiO]n[(CH_3)_2SiO]mSi(CH_3)_2H$	
Viscosity (25°C, mpa.s)	4-8	90-120
Hydrogen Content, wt%	1%	0.28%
Density (25°C):	0.96	
Refractive Index(25°C, nD25)	1.402	
Volatiles(%):	-	⩽1.5
Chemical Structure:		

Various viscosity and hydrogen can be customized.

Applications:

1. LSR Crosslinker — High Crosslink Density

Used as crosslinking agent in Pt-catalyzed addition-cure LSR where higher crosslink density, faster cure

cycle, and improved tensile strength and rebound resilience are required compared to pendant-only crosslinkers. Terminal Si–H groups contribute flexibility; pendant Si–H groups provide additional network nodes. Si–H to vinyl ratio must be optimized for target mechanical properties and cure profile. Avoid contact with Pt catalyst inhibitors (sulfur, tin, phosphorus, amine compounds).

2. Silicone Release Coatings

Used as crosslinker component in thermal and UV-cure silicone release liner coatings for paper and film substrates. Combined terminal and pendant Si–H reactivity provides rapid substrate anchorage and fast through-cure at reduced processing temperatures, improving line speed and reducing energy consumption in release liner manufacturing.

3. Silicone Pressure-Sensitive Adhesives (PSA)

Used as crosslinker in silicone PSA formulations to balance cohesive strength, peel adhesion, and tack. Dual Si–H reactivity enables precise adjustment of network density and gel fraction through Si–H to vinyl stoichiometry, allowing formulation of PSA grades from low-peel removable to high-peel structural specifications.

4. Silicone Foam and Sponge

Used in silicone foam manufacturing where simultaneous chain extension (from terminal Si–H) and crosslinking (from pendant Si–H) combined with controlled hydrogen evolution contribute to uniform cell structure formation and rapid cell wall stabilization.

5. Multi-Functional Copolymer Synthesis

Used as dual-grafting intermediate for synthesizing silicone-modified organic copolymers requiring both chain-end and side-chain functionalization in a single reactive backbone.

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:

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.