Technical Data Sheet

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Silfluo LF-H101T

Terminal-H (Hydride-Terminated) Silicone Fluid

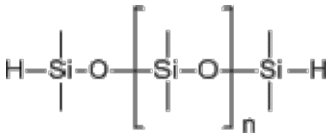
Description:

Silfluo LF-H101T is a hydride-terminated polydimethylsiloxane (CAS 70900-21-9), a telechelic linear PDMS with reactive Si–H groups exclusively at both chain termini.

The terminal-only Si–H architecture is the defining structural feature: under platinum-catalyzed hydrosilylation with olefinic substrates, or tin-catalyzed condensation with hydroxyl groups, only chain-end reactions occur — promoting strictly linear chain extension and ABA block copolymer formation rather than the dense crosslinked networks produced by pendant-H (side-chain Si–H) or high-hydrogen content silicone fluids.

Viscosity and hydrogen content are available across a customizable range, allowing precise molecular weight and reactivity tuning for specific elastomer, block copolymer, and surface modifier synthesis applications.

Typical Technical Properties:

Silfluo Code:	LF-H101T
Chemical Name:	Hydride-Terminated Polydimethylsiloxane
Synonyms:	Poly(dimethylsiloxane) hydride terminated; Terminal Hydrogen Silicone Oil
Appearance	Colorless transparent liquid
CAS NO.:	70900-21-9
Molecular Formula:	$H(CH_3)_2SiO[(CH_3)_2SiO]mSi(CH_3)_2H$
Viscosity (25°C, mpa.s)	40-900
Hydrogen Content, wt%	0.009 ~ 0.80 (can be customized)
Density (25°C):	0.98-1.02
Volatiles(%):	≤5.0
pH Value	6.0-7.0
Chemical Structure:	

Various viscosity and hydrogen content can be customized.

Applications:

1. LSR chain extender — elongation and tear strength improvement

Used as chain-extending additive in addition-cure liquid silicone rubber (LSR) formulations. Terminal Si–H groups react with vinyl-terminated PDMS or vinyl-functional crosslinker during platinum-catalyzed cure,

increasing the distance between crosslink nodes without introducing additional network junctions. Results in significantly improved elongation at break and tear strength without increasing modulus or stiffness — critical for medical, baby care, and high-performance industrial LSR applications.

2. ABA triblock copolymer synthesis

Used as the central silicone B-block in ABA triblock copolymer synthesis via hydrosilylation with olefin-terminated organic polymer A-blocks (polyurethane, polyimide, polycarbonate, polyether). Incorporates a well-defined flexible PDMS segment into the organic polymer backbone, imparting low-temperature flexibility, lubricity, surface hydrophobicity, and UV/thermal weathering resistance to the hybrid polymer.

3. Terminal-functionalized silicone synthesis

Used as reactive PDMS backbone for synthesizing terminal polyether-modified, epoxy-modified, amine-modified, carbinol-modified, and other end-functionalized silicone fluids via hydrosilylation with the corresponding allyl- or vinyl-functional organic reagent. Products are used in textile finishing, personal care, and specialty coating applications.

4. Plastic resin impact modification and internal lubrication

Used as reactive base material for grafting functional organic groups onto the PDMS backbone or for incorporation into plastic compounding as an internal lubricant and impact modifier, improving surface slip, reducing COF, and enhancing impact resistance of standard plastic resins.

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.