



## Silfluo LF-TM107/DM107

Alkoxy-Terminated Silicone Fluid

### Description:

Silfluo LF-TM107/DM107 is a series of alkoxy-terminated polydimethylsiloxane polymers engineered as the base resin for de-alcoholized (alcohol-type, neutral-cure) RTV-1 silicone systems, available in dimethoxy-capped (DM) and trimethoxy-capped (TM) versions across six viscosity grades.

Alkoxy end groups hydrolyze in the presence of atmospheric moisture to generate silanol intermediates, which then condense to form the cured silicone network, releasing methanol as the only by-product — a non-corrosive, non-acetic-acid cure mechanism compatible with metal contacts, electrical components, and glass.

Compared to silanol-terminated PDMS (OH polymer, LF-OHP series), alkoxy end-capping prevents premature condensation with organometallic catalysts during compounding, eliminating viscosity peaking, filler agglomeration, and chain scission-driven shelf-life degradation in the finished sealant.

The structure is as follows:

### Di Methoxy



### Methyl

### Di Methoxy



### Vinyl

### Tri Methoxy



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# Technical Data Sheet



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## Typical Technical Properties:

Silfluo Code:	LF-DM107 -1K	LF-DM107 -10K	LF-DM107 -35K	LF-TM107 -1.5K	LF-TM107 -20K	LF-TM107 -80K
Chemical Name: Synonyms:	Alkoxy-Terminated Polydimethylsiloxane $\alpha,\omega$ -Alkoxy-terminated polydimethylsiloxane; Alkoxy terminated polysiloxane; Alkoxy-functionalized polysiloxane; Alkoxy-terminated silicone polymer; Siloxanes and Silicones, di-Me, (dimethoxymethylsilyl)oxy-terminated; Alkoxy Silicone Fluid; Terminated 107;					
Molecular Structure:	$(RO)_xSi(CH_3)_{3-x}O-[Si(CH_3)_2O]_n-Si(CH_3)_3-x(OR)_x$ (R=CH <sub>3</sub> or C <sub>2</sub> H <sub>5</sub> )					
Appearance	Colorless to light yellow transparent liquid					
End-capping	Methyl dimethoxy capped			Trimethoxy capped		
Viscosity (25°C, mPa.s)	1000	10000	35000	1500	20000	80000
CAS NO.:	68037-58-1			142982-20-5		

Dimension	LF-DM107 (Dimethoxy)	LF-TM107 (Trimethoxy)
Alkoxy groups per chain end	2	3
Crosslink functionality	Difunctional end — lower crosslink density	Trifunctional end — higher crosslink density
Cure speed	Moderate	Faster
Cured network hardness	Lower — higher elongation	Higher — higher modulus
Tensile strength	Moderate	Higher
Typical finished product	Flexible sealants; conformal coatings	Structural sealants; construction sealants

## Alkoxy-Terminated PDMS vs. OH-Terminated PDMS — Compounding Comparison

Performance Factor	OH-Terminated PDMS (LF-OHP)	Alkoxy-Terminated (LF-TM107/DM107)	PDMS

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Performance Factor	OH-Terminated PDMS (LF-OHP)	Alkoxy-Terminated PDMS (LF-TM107/DM107)
Viscosity during compounding	Viscosity peak from premature condensation with catalyst	No viscosity peak; stable, consistent processing state
Shelf life of finished sealant	Chain scission from liberated methanol inhibits cure over time	Stable; finished sealant shelf life typically 12+ months
Filler dispersion	Strong hydrogen bonding causes silica agglomeration (crepe hardening)	Alkoxy end groups do not hydrogen-bond with filler; smooth dispersion
Processing requirement	Heating and vacuum degassing often required	Direct material feeding; no heating or vacuum degassing required
By-product on cure	Varies by crosslinker (acetic acid, oxime, alcohol)	Methanol only — non-corrosive, low odor

## Features

Alkoxy end-capping eliminates viscosity peaking and filler agglomeration during compounding — no heating or vacuum degassing required

Methanol-only cure by-product — non-corrosive to metals, glass, and electrical contacts

Finished sealant shelf life typically 12 months or more under correct storage conditions

Dry time adjustable from 3 to 120 minutes via catalyst selection and loading

Suitable for transparent and pigmented formulations across the full viscosity range

## Applications:

### 1. Adhesives and Sealants

Used as base resin in de-alcoholized RTV-1 sealant formulations for electronic adhesives (non-corrosive bonding, sealing, thermal conductive potting, conformal coating), automotive electronics, solar panel manufacturing, and construction (mirror adhesives, stainless steel adhesives, structural and weather-resistant sealants). Cure speed (dry time 3 - 120 minutes) is adjustable via catalyst type and loading level. Finished sealants based on LF-TM107/DM107 are suitable for fully transparent and pigmented/colored formulations.

### 2. Crosslinker for Silicone Rubber

Used as a crosslinker in condensation-cure silicone rubber formulations, replacing conventional ethyl silicate (TEOS). Alkoxy-terminated PDMS chains incorporated into the network at crosslink points increase chain mobility between crosslinks relative to TEOS-derived systems, resulting in higher elongation at break and

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improved tensile strength in the cured rubber.

### 3. Organic Polymer Modification

Methoxy end groups condense with hydroxyl groups on organic polymer backbones (polyurethanes, acrylics, epoxies) to graft PDMS segments into the organic matrix, imparting surface hydrophobicity, anti-adhesive character, and weather resistance. Graft efficiency and PDMS segment length are controlled by polymer grade (viscosity) and reaction conditions (catalyst, temperature, solvent).

### 4. Specialty Auxiliaries and Surface Treatments

Acts as a release and isolation agent in pressure-sensitive adhesive (PSA) systems. On controlled hydrolysis, yields defoaming agents, release agents, waterproofing agents, and anti-stick paper coatings. Used for water-resistant surface treatment of mineral and organic powders. Formulated into silicone-containing demulsifiers for crude oil dehydration applications.

### **Package & Storage:**

In 25kg pail, 200kg drum and 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.