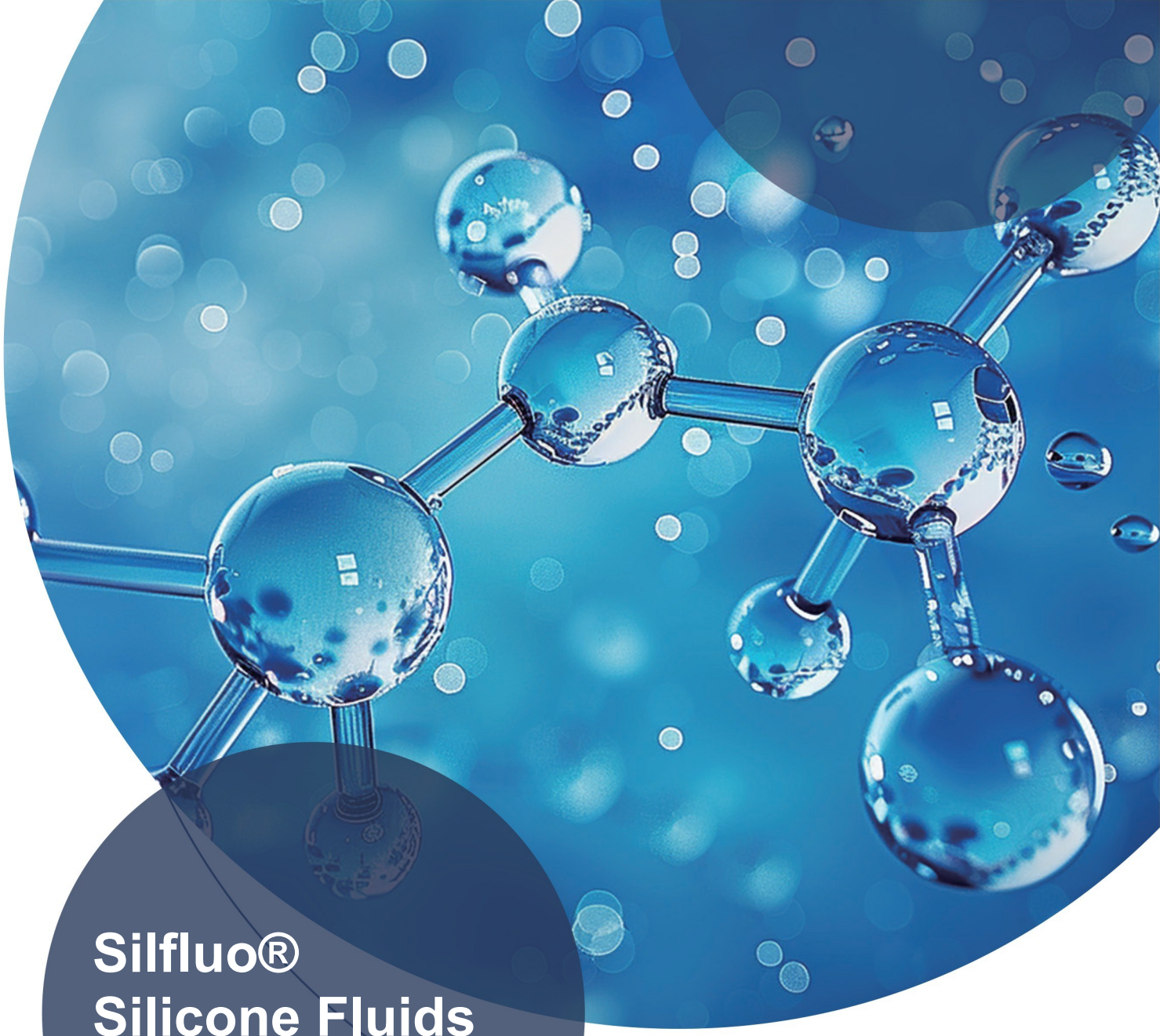


# Silfluo®
# Silicone Fluids

**Product Range with Full Details**

Nanjing Silfluo New Material Co., Ltd.

Silfluo

*www.silfluosilicone.com*

# MANAGEMENT SYSTEM

The Silfluo Quality Management Framework is not a stand-alone platform. It is embedded in the broader Silfluo Operating Discipline Framework, which brings together the policies, standards and workflows for environment, health, safety, manufacturing, human resources and quality. The quality management system is certified to ISO 9001.

With this integrated framework, Silfluo works to one cohesive system based on industry best practice.





# SILFLUO QUALITY MANAGEMENT SYSTEM

The Silfluo Quality Management System, established and supported by company leadership, ensures that customers receive dependable products and services and that their needs and expectations are met. It requires strict compliance with technical specifications, regulatory standards and quality benchmarks.

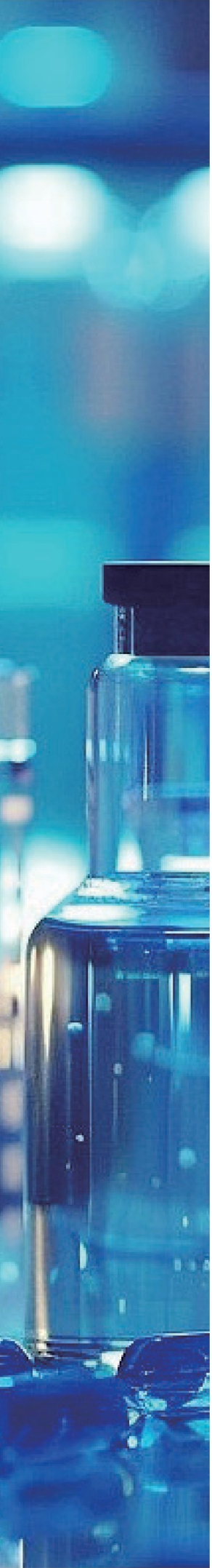
Product quality is upheld through standardization and precise process control. Service quality covers all customer interactions and is overseen by the responsible functional area. The quality attributes of both products and services are defined and agreed upon by Silfluo and its customers.



# QUALITY PERFORMANCE STATEMENT

Excellence in quality is a shared responsibility and a core value for every Silfluo team member. It is achieved through collaboration, dedication and a commitment to continuous improvement.

We are committed to delivering products and services that meet or exceed customer expectations. Quality management ensures that we consistently deliver the products and services our customers trust.



# QUALITY MEASUREMENT SYSTEMS

Silfluo uses QDG (Quality Data Gather) systems to track and evaluate progress in quality improvement. The QDG systems handle high-volume testing, so that every production batch is tested with validated methods.

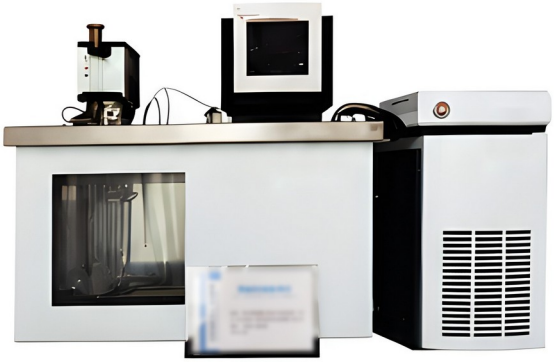
| CONVENTIONAL TEST ITEMS | |
|---|---|
| **Test item** | **Equipment** |
| Viscosity | Rotational viscometer |
| Kinematic viscosity | Automated viscometer |
| Density | Density meter |
| Refractive index | Abbe refractometer |
| Hydroxyl value, amine value | Automatic titrator |
| Identification | FTIR spectrometer |
| Volatile content | Drying oven |
| Others | |

# SILICONE FLUID TESTING

Each batch is tested against its specification before release. Typical test items for silicone fluids are viscosity, density, refractive index, volatile content and functional-group content (Si–H, vinyl, hydroxyl, amine value).



Temperature-controlled rotational viscometer



Automated viscometer



Density meter



Abbe refractometer



FTIR spectrometer



Automatic titrator

# SILICONE FLUIDS

Silicone fluids are linear polysiloxanes: a backbone of alternating silicon and oxygen atoms with organic groups on the silicon atoms. The Si–O backbone gives thermal and oxidative stability, low surface tension, a small change of viscosity with temperature and good dielectric properties. The side groups and end groups decide how a fluid is used.

## Side groups and end groups

• Methyl groups: dimethyl silicone fluids (PDMS) for release, damping, lubrication, foam control and personal care.
• Phenyl groups: higher heat and radiation resistance, low-temperature fluidity and a higher refractive index.
• Trifluoropropyl groups: fluorosilicone fluids that resist fuels, oils and solvents.
• Reactive groups – vinyl, Si–H, silanol (Si–OH) and alkoxy: base polymers and crosslinkers for addition-cure and condensation-cure silicone rubber, sealants, gels and coatings.
• Organic groups – alkyl, polyether, epoxy, acrylate, amino and hydroxyalkyl: additives and reactive modifiers for coatings, polyurethanes, textiles and plastics.
• Emulsions: water-based forms of hydrogen, dimethyl and long-chain alkyl silicone fluids.

## Key properties

• Thermal stability and high flash points (LF-201: flash point ≥ 310 °C)
• Flat viscosity–temperature profile; viscosity from 5 mPa·s (LF-211) to 500,000 mPa·s (LF-221)
• Low surface tension for spreading, release and foam control; water repellency; dielectric properties



LF-221 ultra-high viscosity fluid




LF-H101S side-H silicone fluid



LF-EH101 hydrogen silicone emulsion

# SELECTION GUIDE

Silfluo silicone fluids in nine families. The product pages follow the same order.

| Family | Structure | Silfluo grades | Typical uses |
|---|---|---|---|
| Dimethyl silicone fluids | Trimethylsilyl-terminated PDMS, non-reactive | LF-211, LF-201, LF-221 | Release agents, antifoams, damping and dielectric fluids, lubricants, personal care |
| Alkoxy silicone fluids | Methoxy / alkoxy end groups, moisture curing | LF-TM107 / DM107, LF-M107, LF-MF10 | Alkoxy-cure RTV sealants and adhesives, thermal interface materials, hydrophobic coatings |
| Phenyl silicone fluids | Phenylmethyl and diphenyl units; vinyl, Si –H and epoxy grades | LF-PM11, PM100, PM101, PM102, PM174, PM175, PM12, PM13, PME11, PH11, PH12, PV11 | Heat-transfer and lubricating fluids, diffusion pump fluids, cosmetics, LED encapsulants, resin modification |
| Fluorosilicone fluids | Trifluoropropyl groups; methyl, vinyl, silanol, Si –H, amino, carbinol, perfluoroalkyl and polyether grades | LF-MF11, CMF11, VF11, HF11, CHF11, HF12, VHF13, AF11, CF11, PFH11, PEF11 | Fuel- and solvent-resistant lubricants, non-aqueous antifoams, fluorosilicone rubber, water- and oil-repellent treatments |
| Vinyl silicone fluids | Vinyl end groups (both ends or one end) | LF-VPDMS, LF-VPDMS E-grade, LF-VMPDMS | Base polymers for addition-cure LSR, gels, potting compounds and release coatings |
| Silanol silicone fluids | Si–OH end groups (both ends or one end) | LF-OHP-L, OHP-H, OHPV, OHPM, OHP2, MOHP | Base polymers for condensation-cure RTV sealants; structure-control agents for silicone rubber |
| Hydrogen silicone fluids | Si–H groups: pendant, terminal or both | LF-H101H, H101L, H101S, H101T, H101TS; grades by termination on a page of their own | Crosslinkers and chain extenders for addition cure, hydrophobing agents, intermediates for modified silicones |
| Modified silicone fluids | Alkyl, epoxy, polyether, acrylate or hydroxyalkyl groups | LF-AM11 / AM12, EM102, PE101, PE102, ACM11, DPM12, CM12, CM14 | Coating additives, PU foam stabilizers, reactive modifiers for PU, epoxy and UV-curable resins, release agents |
| Silicone emulsions | Water-based emulsions | LF-EH101, SE201, SE203 | Mold release, textile water repellency, lubrication, coating additives |

# APPLICATIONS



## Rubber, sealants and gels

Vinyl, hydrogen, silanol and alkoxy fluids as base polymers, crosslinkers and chain extenders for LSR, HTV, RTV and gels.



## Electronics and LED

LED encapsulants (LF-PV11, PH11, PH12), potting compounds and dielectric gels, insulating fluids (LF-201, LF-PM11).



## Personal care

Dimethicone grades LF-211, LF-201 and LF-221; phenyl fluids LF-PM12 and LF-PM13 for gloss and refractive index.



## Textiles and leather

Water-repellent and finishing agents: LF-H101H, LF-EH101, LF-MF10, LF-SE201 and LF-PFH11.



## Coatings, inks and resins

Leveling and flow additives (LF-PE101, LF-201); reactive modifiers for PU, epoxy and UV-curable resins (LF-CM12, LF-EM102, LF-ACM11).



## Lubrication and heat transfer

Dimethyl, phenyl methyl and fluorosilicone fluids for lubricants, damping fluids, heat-transfer media and diffusion pumps.



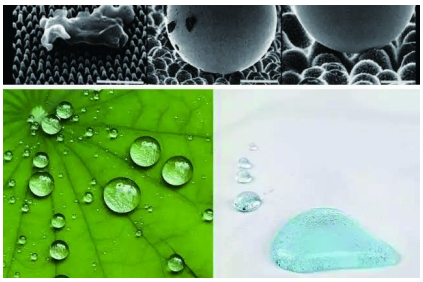
## Release and foam control

Release agents (LF-201, LF-AM11, LF-EH101), antifoams (LF-201, LF-MF11), raw materials for antifoams and cutting fluids (LF-PE101).



## Automotive and car care

Polishes and waxes (LF-201, LF-211), damping fluids, fuel- and oil-resistant fluorosilicone lubricants (LF-MF11, LF-CMF11).



## Water repellency

Hydrophobing of stone, concrete and powders (LF-PFH11, H101H, MF10); water- and oil-repellent treatments (LF-HF12, MF11).

# PRODUCT LIST

| Product Code | Product Name | CAS No. |
|---|---|---|
| **Dimethyl Silicone Fluids** | | |
| LF-211 | Low Viscosity Dimethyl Silicone Fluid | 63148-62-9 |
| LF-201 | Dimethyl Silicone Fluid | 63148-62-9 |
| LF-221 | Ultra-High Viscosity Dimethyl Silicone Fluid | 63148-62-9 |
| **Alkoxy Silicone Fluids** | | |
| LF-TM107 / DM107 | Alkoxy-Terminated Silicone Fluid | 68037-58-1<br>142982-20-5 |
| LF-M107 | Mono-Alkoxy Terminated Silicone Fluid | — |
| LF-MF10 | Methoxy-Terminated Silicone Fluid | 68951-97-3 |
| **Phenyl Silicone Fluids** | | |
| LF-PM11 Series | Phenyl Methyl Silicone Fluids | — |
| LF-PM100 | Phenyl Methyl Silicone Fluid | — |
| LF-PM101 | Phenyl Methyl Silicone Fluid | — |
| LF-PM102 | Phenyl Methyl Silicone Fluid | — |
| LF-PM174 | Silicone Diffusion Pump Fluid | — |
| LF-PM175 | Silicone Diffusion Pump Fluid | — |
| LF-PM12 | Diphenyl Silicone Fluid | 68083-14-7 |
| LF-PM13 | Phenyl Siloxane | 2116-84-9 |
| LF-PME11 | Epoxy-Functional Phenyl Methyl Silicone Fluid | — |
| LF-PH11 | Phenyl Hydrogen Silicone Fluid | — |
| LF-PH12 | Hydride-Terminated Phenyl Silicone Fluid | — |
| LF-PV11 | Phenyl Vinyl Silicone Fluid | — |
| **Fluorosilicone Fluids** | | |
| LF-MF11 | Methyl-Terminated Fluorosilicone Fluid | 63148-56-1 |
| LF-CMF11 | Methyl Fluorosilicone Copolymer Fluid | 115361-68-7 |
| LF-VF11 | Vinyl-Functional Fluorosilicone Fluid | 68951-98-4 |
| LF-HF11 | Silanol-Terminated Fluorosilicone Fluid | 68607-77-2 |
| LF-CHF11 | Hydroxyl Fluorosilicone Copolymer Fluid | — |
| LF-HF12 | Hydrogen-Functional Fluorosilicone Fluid | 67923-24-4 (M, TS)<br>1988741-30-5 (T03) |
| LF-VHF13 | Silanol- and Vinyl-Functional Fluorosilicone Fluid | — |
| LF-AF11 | Amino-Functional Fluorosilicone Fluid | — |
| LF-CF11 | Carbinol-Functional Fluorosilicone Fluid | — |
| LF-PFH11 | Perfluorohexyl Silicone Fluid | — |
| LF-PEF11 | Polyether-Modified Fluorosiloxane | — |
| **Vinyl Silicone Fluids** | | |
| LF-VPDMS | Vinyl Silicone Fluid (Divinyl-terminated) | 68083-19-2 |
| LF-VPDMS E-grade | Electronic-Grade Vinyl-Terminated Polydimethylsiloxane | 68083-19-2 |
| LF-VMPDMS | Mono-Vinyl Terminated Silicone Fluid | 68952-00-1 |
| **Silanol (Hydroxyl) Silicone Fluids** | | |
| LF-OHP-L | Low-Medium Viscosity Silanol-Terminated PDMS | 70131-67-8 |
| LF-OHP-H | High Viscosity Silanol-Terminated PDMS | 63148-60-7 |
| LF-OHPV | Vinyl Hydroxy Silicone Fluid | 67923-19-7 |
| LF-OHPM | Phenyl Methyl Hydroxy Silicone Fluid | 80801-30-5 |
| LF-OHP2 | Diphenyl Hydroxy Silicone Fluid | 63148-59-4 |

# PRODUCT LIST (CONTINUED)

| Product Code | Product Name | CAS No. |
|---|---|---|
| LF-MOHP | Monohydroxyl-Terminated Silicone Fluid | — |
| **Hydrogen Silicone Fluids** | | |
| LF-H101H | High Hydrogen Silicone Fluid | 63148-57-2 |
| LF-H101L | Low Hydrogen Silicone Fluid | 68037-59-2 |
| LF-H101S | Side-H Silicone Fluid | 68037-59-2 |
| LF-H101T | Terminal-H (Hydride-Terminated) Silicone Fluid | 70900-21-9 |
| LF-H101TS | Terminal and Side-H Silicone Fluid | 69013-23-6 |
| **Modified Silicone Fluids** | | |
| LF-AM11 / AM12 | Alkyl and Alkyl Aryl Silicone Fluids | — |
| LF-EM102 | Epoxy-Modified Silicone Fluid | — |
| LF-PE101 Series | Polyether-Modified Silicone Fluids | — |
| LF-PE102 | Silicone Polyether Surfactant for Rigid PU Foam | — |
| LF-ACM11 Series | Acrylate-Modified Silicone Fluids | — |
| LF-DPM12 Series | Hydroxyl-Terminated Polyether-Modified Silicone Fluids | — |
| LF-CM12 Series | Hydroxyalkyl-Terminated Silicone Fluids | — |
| LF-CM14 | Tetrahydroxyalkyl-Functional Silicone Fluid | — |
| **Silicone Emulsions** | | |
| LF-EH101 | Methyl Hydrogen Polysiloxane Emulsion | — |
| LF-SE201 | Silicone Emulsion | — |
| LF-SE203 | Long-Chain Alkyl (Aryl) Silicone Emulsion | — |

## DIMETHYL SILICONE FLUIDS

# LOW VISCOSITY DIMETHYL SILICONE FLUID LF-211

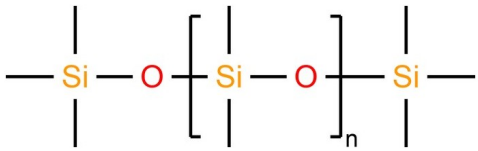
## Description:

Silfluo LF-211 is a series of low-viscosity polydimethylsiloxane (PDMS) fluids (CAS 63148-62-9), available in four controlled viscosity grades from 5 mPa·s to 50 mPa·s.

The low molecular weight and short chain length of the LF-211 series deliver low surface tension, rapid spreading and penetration, lightweight non-greasy skin feel, and fast-acting defoaming capability — performance characteristics fundamentally distinct from the standard-to-high viscosity LF-201 series.

Flash points range from ≥115 °C (5 mPa·s grade) to ≥270 °C (50 mPa·s grade); the lower flash point of the 5 mPa·s and 10 mPa·s grades requires attention to flammability classification in specific regulatory frameworks.

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-211-5 | LF-211-10 | LF-211-20 | LF-211-50 |
|---|---|---|---|---|
| Chemical Name / Synonyms | Polydimethylsiloxane (PDMS) Low Viscosity Dimethyl Silicone Oil; Dimethicone | | | |
| Molecular Formula | $(C_2H_6OSi)_n$ | | | |
| Molecular Weight | Variable (Polymer) | | | |
| CAS No. | 63148-62-9 | | | |
| EINECS No. | 613-156-5 | | | |
| Viscosity (25 °C, mPa·s) | 5±1 | 10±1 | 20±2 | 50±5 |
| Flash Point (opened cup) | ≥115 °C | ≥160 °C | ≥180 °C | ≥270 °C |
| Density (25 °C, g/cm³) | / | 0.930~0.940 | 0.940~0.960 | 0.956~0.966 |
| Refractive Index (25 °C, nD25) | 1.3940~1.4020 | 1.3940~1.4020 | 1.3940~1.4020 | 1.4020~1.4040 |
| Volatile (150 °C, 2 h)/% | / | / | / | ≤1.0 |

| Grade | Viscosity | Recommended Primary Use |
|---|---|---|
| LF-211-5 | 5 mPa·s | Penetrating lubricant; fast-spreading defoamer base; volatile carrier |
| LF-211-10 | 10 mPa·s | Personal care carrier; antiperspirant base; precision lubrication |
| LF-211-20 | 20 mPa·s | Skin care and hair care emollient; leather care; light damping |
| LF-211-50 | 50 mPa·s | Surface care polishes; mold release; heat transfer; defoamer base |

# LOW VISCOSITY DIMETHYL SILICONE FLUID LF-211 (CONTINUED)

## Applications:

**1. Personal Care and Cosmetics (Dimethicone).** Used as volatile carrier and lightweight base fluid in antiperspirants, skin care creams, and hair care products. Provides good wet and dry combing, static reduction, and a silky non-greasy tactile finish. Recommended grades: LF-211-5 to LF-211-20.

**2. Leather and Surface Care.** Used in leather protectants, furniture polishes, and automotive interior care formulations, delivering high gloss, good spreading, and deep conditioning feel without heavy residue. Recommended grades: LF-211-20 to LF-211-50.

**3. Penetrating Lubricant.** Low viscosity enables good penetration into tight clearances and fine mechanical contacts in precision machinery, delicate plastic-to-metal components, and fine mechanisms where standard oils are too viscous. Recommended grades: LF-211-5 to LF-211-10.

**4. Defoaming Base Material.** Low surface tension and strict incompatibility with aqueous systems make LF-211 an effective, fast-spreading base fluid for formulating specialized defoamers and antifoaming agents in chemical processing, fermentation, and paint manufacturing. Recommended grades: LF-211-10 to LF-211-50.

**5. Damping and Heat Transfer Fluid.** Used as low-temperature damping fluid for delicate precision instruments and as thermally stable heat transfer medium in specialized thermal management systems. Recommended grades: LF-211-20 to LF-211-50.

**6. Precision Mold Release.** Fast-spreading, lightweight release agent for intricate rubber and plastic molding with complex geometries requiring rapid, uniform parting film formation and minimal residue on the molded part. Recommended grades: LF-211-20 to LF-211-50.

## Package & Storage:

In 200 kg drum and 950 kg IBC

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 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.

# DIMETHYL SILICONE FLUID LF-201

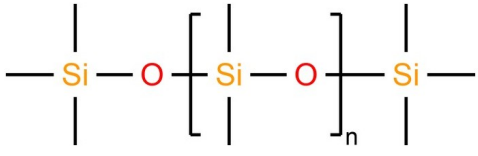
## Description:

Silfluo LF-201 is a series of standard-to-high viscosity polydimethylsiloxane (PDMS) fluids (CAS 63148-62-9), available in controlled viscosity grades from 100 mPa·s to 60,000 mPa·s.

The series is characterized by clear appearance, odorless and chemically inert nature, flat viscosity-temperature profile, high thermal stability (flash point ≥310 °C across all grades), good dielectric properties, inherent water repellency, and low surface tension.

Grades span the full range from low-viscosity film-forming and surface-treatment applications through high-viscosity mechanical damping and heavy-duty defoaming base applications.

## Chemical Structure:



# DIMETHYL SILICONE FLUID LF-201 (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-201-100 | LF-201-200 | LF-201-350 | LF-201-500 | LF-201-1000 | LF-201-12500 | LF-201-60000 |
|---|---|---|---|---|---|---|---|
| Chemical Name / Synonyms | Polydimethylsiloxane (PDMS) Dimethyl Silicone Oil; Dimethicone | | | | | | |
| Molecular Formula | $(C_2H_6OSi)_n$ | | | | | | |
| Molecular Weight | Variable (Polymer) | | | | | | |
| CAS No. | 63148-62-9 | | | | | | |
| EINECS No. | 613-156-5 | | | | | | |
| Viscosity (25 °C, mPa·s) | 100±5 | 200±20 | 350±20 | 500±25 | 1000±50 | 12500±630 | 60000±3000 |
| Flash Point (opened cup), °C | ≥310 | ≥310 | ≥315 | ≥315 | ≥320 | ≥330 | ≥330 |
| Density (25 °C, g/cm³) | 0.958~0.968 | 0.960~0.972 | 0.962~0.972 | 0.962~0.972 | 0.965~0.975 | 0.968~0.978 | 0.970~0.980 |
| Refractive Index (25 °C, nD25) | 1.4020~1.4040 | 1.4020~1.4040 | 1.4020~1.4040 | 1.4020~1.4040 | 1.4025~1.4045 | 1.4025~1.4045 | 1.4025~1.4045 |
| Volatile (150 °C, 2 h)/% | ≤1.00 | ≤1.00 | ≤1.00 | ≤1.00 | ≤1.00 | ≤1.00 | ≤1.00 |

## Applications:

**1. Mold Release Agent.** Acts as a non-carbonizing release agent for rubber, plastics, and metal die-casting. Creates a durable, non-stick parting film ensuring clean demolding and reduced defect rates. Recommended grades: LF-201-100 to LF-201-500 for spray application; higher viscosity grades for brush or wipe application.

**2. Defoamer and Antifoam Agent.** Low surface tension enables effective foam control at very low addition levels in aqueous and non-aqueous systems. Used in petroleum refining, chemical processing, fermentation, paint manufacturing, and wastewater treatment. Recommended grades: LF-201-200 to LF-201-1000 as defoamer base fluid.

**3. Mechanical Damping Fluid.** Flat viscosity-temperature profile and high shear stability make mid-to-high viscosity grades suited to dashpots, shock absorbers, precision gauges, and hydraulic timers requiring consistent damping performance across temperature extremes. Recommended grades: LF-201-1000 to LF-201-60000.

**4. Cosmetics and Personal Care (Dimethicone).** Functions as an emollient in hand creams, skin protectants, sunscreens, and hair grooming products. Forms a breathable, non-greasy protective barrier imparting a silky-smooth feel. Recommended grades: LF-201-200 to LF-201-1000 depending on desired skin feel and spreadability.

**5. Surface Care and Polishes.** Active ingredient in automotive waxes, furniture polishes, and leather care products, providing high gloss, water repellency, and easy rub-out. Recommended grades: LF-201-100 to LF-201-350.

**6. Paint and Coating Additive.** Used at micro-dose levels to improve flow, leveling, and mar resistance in industrial coatings while preventing pigment floating and silking. Recommended grades: LF-201-100 to LF-201-350; verify compatibility at target loading in specific formulation.

**7. Electrical and Dielectric Fluid.** High dielectric strength and thermal stability suit the LF-201 series as insulating and heat-transfer fluid in specialized electrical transformers and capacitors. Recommended grades: LF-201-500 to LF-201-12500.

**8. Industrial Lubricant.** Provides long-lasting, non-reactive lubrication for plastic-to-plastic and plastic-to-metal moving parts in precision mechanisms, reducing friction and wear under continuous service. Recommended grades: LF-201-350 to LF-201-1000.

## DIMETHYL SILICONE FLUID LF-201 (CONTINUED)

| Grade | Viscosity | Recommended Primary Use |
|---|---|---|
| LF-201-100 | 100 mPa·s | Mold release; surface care; paint additive; light lubrication |
| LF-201-200 | 200 mPa·s | Cosmetics emollient; defoamer base; coating additive |
| LF-201-350 | 350 mPa·s | Personal care; polishes; general-purpose fluid |
| LF-201-500 | 500 mPa·s | Defoamer base; cosmetics; surface treatment |
| LF-201-1000 | 1,000 mPa·s | Light damping fluid; heavy defoamer; dielectric fluid |
| LF-201-12500 | 12,500 mPa·s | Mechanical damping; shock absorbers; hydraulic timers |
| LF-201-60000 | 60,000 mPa·s | High-load damping; heavy-duty release agent base |

### Package & Storage:

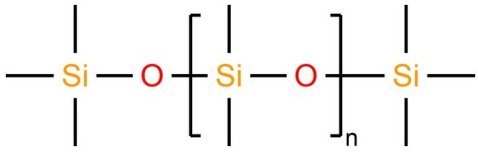
In 200 kg drum and 950 kg, 1000 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. It is shipped as non-hazardous substance.
Storage beyond the shelf life does not necessarily mean 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.

## ULTRA-HIGH VISCOSITY DIMETHYL SILICONE FLUID LF-221

### Description:

Silfluo LF-221 is a series of ultra-high viscosity polydimethylsiloxane (PDMS) fluids (CAS 63148-62-9), available in two grades — 100,000 mPa·s and 500,000 mPa·s — representing the highest viscosity tier of the Silfluo PDMS fluid range.
The long polymer chain length delivers high shear resistance, tenacious stay-in-place performance under mechanical stress, and thick-film lubrication and damping capability that lower-viscosity PDMS grades do not provide.
Flash point ≥330 °C across both grades and low volatiles (≤1.50%) confirm high thermal stability and minimal evaporative loss under sustained high-temperature service conditions.

### Chemical Structure:



# ULTRA-HIGH VISCOSITY DIMETHYL SILICONE FLUID LF-221 (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-221-100000 | LF-221-500000 |
|---|---|---|
| Chemical Name / Synonyms | Polydimethylsiloxane (PDMS) Ultra-High Viscosity Dimethyl Silicone Oil; Dimethicone | |
| Molecular Formula | $(C_2H_6OSi)_n$ | |
| Molecular Weight | Variable (Polymer) | |
| CAS No. | 63148-62-9 | |
| EINECS No. | 613-156-5 | |
| Viscosity (25 °C, mPa·s) | 100000±5000 | 500000±25000 |
| Flash Point (opened cup) | ≥330 °C | ≥330 °C |
| Density (25 °C, g/cm³) | 0.970~0.980 | 0.960~0.972 |
| Refractive Index (25 °C, nD25) | 1.4025~1.4045 | 1.4020~1.4040 |
| Volatile (150 °C, 2 h)/% | ≤1.00 | ≤1.50 |

| Series | Viscosity Range | Primary Characteristics |
|---|---|---|
| LF-211 | 5–50 mPa·s | Ultra-low; fast-spreading; penetrating; volatile-like feel |
| LF-201 | 100–60,000 mPa·s | Standard to high; film-forming; general-purpose |
| LF-221 | 100,000–500,000 mPa·s | Ultra-high; tenacious; extreme shear resistance; stay-in-place |

## Applications:

**1. Heavy-Duty Damping and Viscous Drives.** Used as the working fluid in automotive viscous fan clutches, torsional vibration dampers, and heavy-duty shock absorbers. The flat viscosity-temperature profile and high shear resistance maintain consistent damping torque across wide operating temperature ranges. Recommended grade: LF-221-100000 to LF-221-500000 depending on required torque specification.

**2. Thermoplastic Internal Lubrication.** Blended directly into thermoplastic resins (PP, ABS, PA, PC) during compounding as a non-migrating internal lubricant. Improves melt flow and mold filling, reduces part-to-part friction and surface squeak, and eliminates bloom or plate-out associated with low-molecular-weight lubricant additives. Recommended grade: LF-221-100000.

**3. Intensive Hair Care and Serums (Heavy Dimethicone).** Used as substantive high-molecular-weight dimethicone in hair serums, intensive hair masks, and split-end repair treatments. Forms a durable high-gloss protective film that seals cuticles, locks in moisture, and provides wet and dry detangling for severely damaged or chemically processed hair. Recommended grade: LF-221-100000.

**4. Specialized Boundary Lubrication.** Used in demanding mechanical applications — sliding rails, heavy-load pivots, and extreme-pressure contact points — where standard lubricants squeeze out or drip under pressure. Ultra-high viscosity gives stay-in-place boundary film retention under prolonged mechanical load. Recommended grade: LF-221-100000 to LF-221-500000.

**5. High-Tack Antifoam Compounds.** Used as heavy base component in formulating specialized heavy-duty antifoam compounds for extreme processing environments involving severe agitation, high-temperature foaming systems, and non-aqueous industrial process streams. Recommended grade: LF-221-500000.

# ULTRA-HIGH VISCOSITY DIMETHYL SILICONE FLUID LF-221 (CONTINUED)

## Package & Storage:

In 200 kg drum and 950 kg, 1000 kg IBC.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 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.

## ALKOXY SILICONE FLUIDS

# ALKOXY-TERMINATED SILICONE FLUID LF-TM107 / DM107

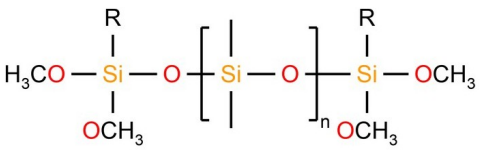
## Description:

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.

## Chemical Structure:



R = $CH_3$ (dimethoxy) or $OCH_3$ (trimethoxy)

## 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 α,ω-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=$CH_3$) | | | | | |
| 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 | | |

# ALKOXY-TERMINATED SILICONE FLUID LF-TM107 / DM107 (CONTINUED)

| 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 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 improved tensile strength in the cured rubber.

# ALKOXY-TERMINATED SILICONE FLUID LF-TM107 / DM107 (CONTINUED)

**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 25 kg pail, 200 kg 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.

# MONO-ALKOXY TERMINATED SILICONE FLUID LF-M107

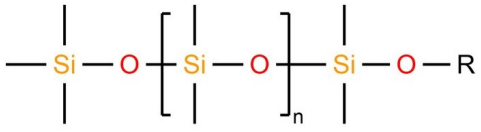
## Description:

Silfluo LF-M107 is a series of mono-alkoxy terminated polydimethylsiloxane fluids with a single reactive alkoxysilyl end group and one inert trimethylsilyl terminus.

The monofunctional architecture allows covalent anchoring to inorganic substrate surfaces via hydrolysis and condensation of the single alkoxy group, while the PDMS chain extends away from the surface as a non-crosslinking, mobile silicone tail. This surface-grafted configuration reduces inter-particle friction and steric interactions in highly filled systems without forming a rigid crosslinked network — a topological distinction from dual-functional silane coupling agents or bifunctional silicone fluids.

Three grades — LF-M107-30, LF-M107-50, and LF-M107-70 — provide viscosities of 30, 50, and 70 mPa·s respectively; higher viscosity corresponds to longer PDMS chain length and greater steric separation between treated filler particles.

## Chemical Structure:




R = alkyl group

# MONO-ALKOXY TERMINATED SILICONE FLUID LF-M107 (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-M107-30 | LF-M107-50 | LF-M107-70 |
|---|---|---|---|
| Chemical Name / Synonyms | Mono-Alkoxy Terminated Polydimethylsiloxane Single End-Capped Alkoxy Silicone Fluid; Mono-functional Alkoxy Siloxane | | |
| End-capping | Mono-Alkoxy (Single end-capped) | | |
| Appearance | Transparent to light yellow transparent liquid | | |
| Viscosity (25 °C, mPa·s) | 30 | 50 | 70 |

## Applications:

**1. Thermally Conductive Interface Materials (TIMs).** Used as surface treatment agent and dispersant for thermally conductive inorganic fillers — alumina (Al2O3), aluminum nitride (AlN), and zinc oxide (ZnO) — in thermal greases, gels, phase-change materials, and potting compounds. Single alkoxy group anchors to filler surface; PDMS tail reduces inter-particle friction and filler–polymer interaction, lowering compound viscosity at high filler loading and allowing increased filler volume fraction for higher thermal conductivity. Optimize addition level (typically 0.5–3 wt% on filler weight), treatment method (dry blending or wet treatment), and cure conditions via compound trials.

**2. Conductive Silicone Adhesives and Sealants.** Used to improve dispersion stability and compatibility of electrically conductive metallic (silver, copper) or carbon-based fillers (carbon black, graphene) in silicone adhesive and sealant formulations, reducing filler agglomeration and improving electrical contact between filler particles.

**3. Reactive Diluent for Low-Modulus Silicone Systems.** Used as reactive diluent and base polymer component in low-modulus silicone rubbers, soft gels, and specialty foam formulations where reduction of compound viscosity and modulus without non-reactive plasticizer migration is required.

**4. Organic-Inorganic Hybrid Polymer Compatibilizer.** Used as reactive compatibilizer in hybrid polymer systems, anchoring to inorganic filler or substrate surfaces via the alkoxy group and providing silicone-compatible interface chemistry for organic polymer matrices incorporating inorganic components.

## Package & Storage:

In 25 kg pail, 200 kg 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.

# METHOXY-TERMINATED SILICONE FLUID LF-MF10

## Description:

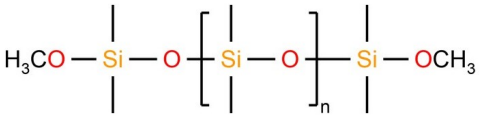
Silfluo LF-MF10 is a methoxy-terminated polydimethylsiloxane (CAS 68951-97-3) with reactive methoxy end groups on both chain termini and ultra-low viscosity of 3 mPa·s.

Terminal methoxy groups hydrolyze in the presence of ambient moisture to form silanols, which condense with each other or with substrate surface silanols to form siloxane crosslinks, releasing methanol as co-product. The bifunctional terminal reactivity incorporates the PDMS chain covalently into the moisture-cured network, preventing migration from the cured matrix.

# METHOXY-TERMINATED SILICONE FLUID LF-MF10 (CONTINUED)

Ultra-low viscosity (3 mPa·s) makes LF-MF10 useful as reactive diluent in alkoxy-cure RTV formulations — reducing compound viscosity without introducing non-reactive plasticizer that would bleed over time.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-MF10 |
| Chemical Name / Synonyms | Methoxy-Terminated Polydimethylsiloxane Methoxy PDMS; Silicone fluid with methoxy end groups |
| CAS No. | 68951-97-3 |
| Appearance | Yellowish transparent liquid |
| Viscosity (25 °C, mPa·s) | 3 |

## Applications:

**1. Alkoxy-Cure RTV Sealants and Adhesives.** Used as reactive diluent and modifier in alkoxy-curing RTV silicone sealants and adhesives. Ultra-low viscosity reduces compound viscosity and improves extrudability and tooling without introducing non-reactive plasticizer. Terminal methoxy groups hydrolyze and condense into the sealant network during moisture cure, incorporating the PDMS chain as a permanent network segment. Addition level should be optimized against target viscosity, cure rate, and final mechanical properties; excess methoxy groups accelerate cure but increase methanol release — assess occupational methanol vapor exposure per local regulations for enclosed application environments.

**2. Hydrophobic and Anti-Graffiti Coatings.** Used as reactive base or additive in alkoxy-cure coatings for surfaces requiring water repellency, weatherability, and abrasion resistance. Moisture-triggered crosslinking forms a covalently bonded siloxane coating layer on hydroxyl-bearing substrates (glass, concrete, ceramics, metal). Applied by spray or wipe in solution; cure proceeds at ambient temperature and humidity. Verify substrate hydroxyl density and ambient humidity conditions for consistent cure performance.

**3. Electronic Conformal Coatings and Encapsulants.** Used as low-viscosity reactive base in conformal coatings and encapsulants for electronics, providing moisture penetration into fine geometries and connectors followed by in-situ moisture cure to form a protective siloxane layer against moisture ingress and dielectric breakdown. Methanol release during cure must be managed in enclosed assemblies — ensure adequate ventilation or evaluate cure conditions for confined electronic housings.

**4. Textile and Leather Waterproofing.** Applied to textile and leather substrates as moisture-curing water-repellent treatment. Crosslinked siloxane network formed on fiber or leather surfaces reduces water absorption without forming a surface film, maintaining substrate breathability and tactile properties. Apply by padding or spray in dilute solution; cure at ambient conditions or accelerate with mild heat.

## Package & Storage:

In 25 kg pail, 200 kg drum and IBC.

## METHOXY-TERMINATED SILICONE FLUID LF-MF10 (CONTINUED)

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.

## PHENYL SILICONE FLUIDS

# PHENYL METHYL SILICONE FLUIDS LF-PM11 SERIES

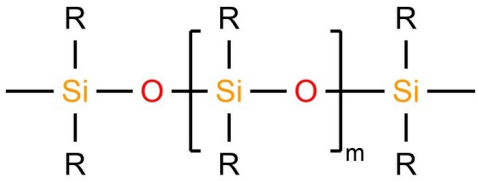
## Description:

Silfluo LF-PM11 is a series of phenyl methyl silicone fluids comprising LF-PM11 and six viscosity grades: LF-PM11-75, -150, -300, -500, -1000 and -2000.

LF-PM11: performance equivalent to Dow DC-510 and Shin-Etsu KF-50.

LF-PM11-75, -150, -300, -500, -1000 and -2000: performance equivalent to Dow DC-550 and WACKER AP-100.

## Chemical Structure:







## Typical Technical Properties:

| Silfluo Code | LF-PM11 | LF-PM11-75 | LF-PM11-150 | LF-PM11-300 |
|---|---|---|---|---|
| Appearance | Colorless transparent liquid | | | |
| Kinematic Viscosity (25 °C, cSt) | 25–40 | 50–100 | 100–200 | 200–400 |
| Specific Gravity (25 °C) | 1.010–1.080 | 1.020–1.080 | 1.020–1.080 | 1.020–1.080 |
| Flash Point (°C) | ≥240 | ≥280 | ≥300 | ≥300 |
| Freezing Point (°C) | ≤−45 | ≤−40 | ≤−40 | ≤−40 |
| Refractive Index (25 °C) | 1.47–1.48 | 1.49–1.51 | 1.49–1.51 | 1.49–1.51 |

| Silfluo Code | LF-PM11-500 | LF-PM11-1000 | LF-PM11-2000 |
|---|---|---|---|
| Appearance | Colorless transparent liquid | | |
| Kinematic Viscosity (25 °C, cSt) | 400–600 | 900–1100 | 1500–2500 |
| Specific Gravity (25 °C) | 1.020–1.080 | 1.020–1.080 | 1.020–1.080 |
| Flash Point (°C) | ≥300 | ≥300 | ≥300 |
| Freezing Point (°C) | ≤−40 | ≤−40 | ≤−40 |
| Refractive Index (25 °C) | 1.49–1.51 | 1.49–1.51 | 1.49–1.51 |

## Features:

- LF-PM11: Low viscosity, a low freezing point and good heat resistance.
- LF-PM11-75 to LF-PM11-2000: High flash points and resistance to oxidation, radiation and hydrolysis.

# PHENYL METHYL SILICONE FLUIDS LF-PM11 SERIES (CONTINUED)

## Applications:

**1. Electrical insulation.** LF-PM11 is used as an insulating impregnation fluid. LF-PM11-75 to LF-PM11-2000 are used in insulating fluid formulations.

**2. Lubricating oils and greases.** LF-PM11-75 to LF-PM11-2000 are used as base fluids for high-temperature lubricating oils and greases, including formulations for high-speed fan bearings, ball bearings and automotive engine components.

**3. Heat transfer.** LF-PM11-75 to LF-PM11-2000 are used as heat-transfer fluids for high-temperature service.

**4. Damping and dust control.** LF-PM11-75 to LF-PM11-2000 are used in damping, vibration-control and dust-suppression applications.

**5. Plastics processing.** LF-PM11-75 to LF-PM11-2000 are used as internal silicone additives in plastic formulations.

**6. Cosmetic additives.** LF-PM11 is used as an additive in cosmetic formulations.

**7. Release and anti-blocking.** LF-PM11 is used as a release and anti-blocking agent for plasma bags.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

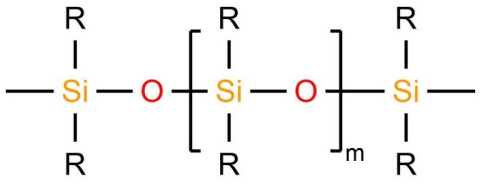
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# PHENYL METHYL SILICONE FLUID LF-PM100

## Description:

Silfluo LF-PM100 is a phenyl methyl silicone fluid for low-temperature lubrication, hydraulic service and damping. The supplied viscosity range allows selection for different fluid-service requirements.

## Chemical Structure:






# PHENYL METHYL SILICONE FLUID LF-PM100 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM100 |
| Appearance | Colorless transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 50–100000 |
| Specific Gravity (25 °C) | 1.000–1.020 |
| Flash Point (°C) | ≥280 |
| Freezing Point (°C) | ≤−57 |
| Refractive Index (25 °C) | 1.42–1.43 |

## Applications:

**1. Low-temperature lubrication.** Used as a base fluid for low-temperature greases and in lubricants for plastic bearings.
**2. Hydraulic systems.** Used as a working fluid for hydraulic power transmission.
**3. Instrumentation.** Used as a damping fluid in instruments and mechanical devices.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

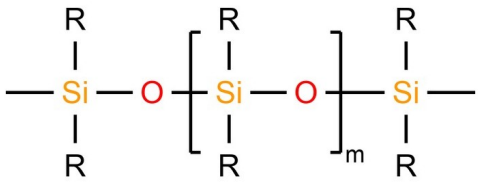
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

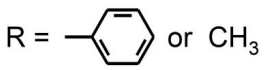
# PHENYL METHYL SILICONE FLUID LF-PM101

## Description:

Silfluo LF-PM101 is a high-phenyl silicone fluid. It is a phenyl methyl polysiloxane for industrial fluid and lubricant formulations which can withstand operating temperatures up to 350 °C.

## Chemical Structure:



# PHENYL METHYL SILICONE FLUID LF-PM101 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM101 |
| Appearance | Colorless transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 500–20000 |
| Specific Gravity (25 °C) | 1.050–1.100 |
| Flash Point (°C) | ≥300 |
| Freezing Point (°C) | ≤−40 |
| Refractive Index (25 °C) | 1.53–1.54 |

## Applications:

**1. Industrial lubricant formulations.** Used as a phenyl silicone base-fluid component in lubricating oil and grease formulations.

**2. Heat-transfer and damping formulations.** Used as a phenyl silicone fluid component in industrial heat-transfer and damping formulations.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

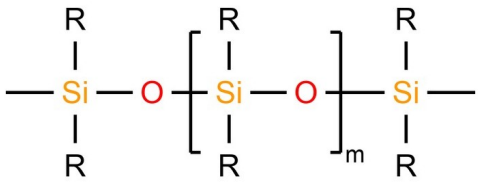
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

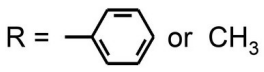
# PHENYL METHYL SILICONE FLUID LF-PM102

## Description:

Silfluo LF-PM102 is a medium-to-low-phenyl silicone fluid. It is a phenyl methyl polysiloxane for industrial fluid and lubricant formulations which can withstand operating temperatures up to 350 °C.

## Chemical Structure:



# PHENYL METHYL SILICONE FLUID LF-PM102 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM102 |
| Appearance | Colorless transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 100–20000 |
| Specific Gravity (25 °C) | 1.020–1.060 |
| Flash Point (°C) | ≥280 |
| Freezing Point (°C) | ≤−40 |
| Refractive Index (25 °C) | 1.46–1.48 |

## Applications:

**1. Industrial lubricant formulations.** Used as a phenyl silicone base-fluid component in lubricating oil and grease formulations.

**2. Heat-transfer and damping formulations.** Used as a phenyl silicone fluid component in industrial heat-transfer and damping formulations.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

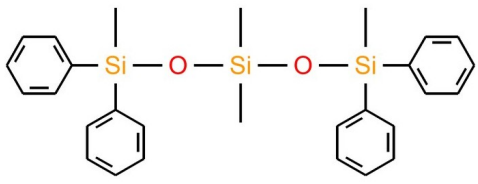
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# SILICONE DIFFUSION PUMP FLUID LF-PM174

## Description:

Silfluo LF-PM174 is a silicone fluid for high-vacuum diffusion pumps. It combines low saturated vapor pressure with thermal stability and oxidation resistance.

## Chemical Structure:



# SILICONE DIFFUSION PUMP FLUID LF-PM174 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM174 |
| Appearance | Colorless transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 36–40 |
| Specific Gravity (25 °C) | 1.020–1.080 |
| Flash Point (°C) | ≥210 |
| Freezing Point (°C) | −18 to −14 |
| Refractive Index (25 °C) | 1.55–1.56 |
| Ultimate Vacuum (Torr) | ≤ $3.1 \times 10^{-7}$ |

## Applications:

**1. Vacuum coating and metallurgical processing.** Used as the working fluid in diffusion-pump vacuum systems for vacuum coating and high-vacuum smelting.

**2. Electron-tube production and microscopy.** Used in diffusion-pump systems serving electron-tube manufacturing and electron microscopy.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

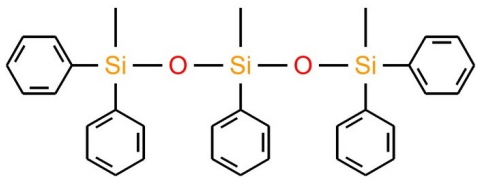
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# SILICONE DIFFUSION PUMP FLUID LF-PM175

## Description:

Silfluo LF-PM175 is a silicone fluid for high-vacuum diffusion pumps. It combines low saturated vapor pressure with thermal stability and oxidation resistance.

## Chemical Structure:



# SILICONE DIFFUSION PUMP FLUID LF-PM175 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM175 |
| Appearance | Colorless transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 165–185 |
| Specific Gravity (25 °C) | 1.090–1.100 |
| Flash Point (°C) | ≥245 |
| Freezing Point (°C) | −18 to −14 |
| Refractive Index (25 °C) | 1.5765–1.5785 |
| Ultimate Vacuum (Torr) | ≤ $3.1 \times 10^{-9}$ |

## Applications:

**1. Vacuum coating and metallurgical processing.** Used as the working fluid in diffusion-pump vacuum systems for vacuum coating and high-vacuum smelting.

**2. Electron-tube production and microscopy.** Used in diffusion-pump systems serving electron-tube manufacturing and electron microscopy.

## Packing:

25 kg or 200 kg drums and 1000 L IBCs.

## Safety and Storage:

Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# DIPHENYL SILICONE FLUID LF-PM12

## Description:

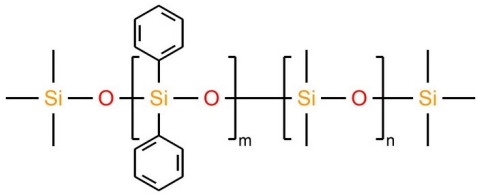
Silfluo LF-PM12 is a series of diphenyl dimethyl polysiloxane copolymer fluids (CAS 68083-14-7) with trimethylsilyl end groups and a backbone containing both diphenylsiloxane (D-Ph) and dimethylsiloxane (D-Me) repeat units, available in three grades (LF-PM12A, B, D) differentiated by diphenyl content and refractive index.

The molecular architecture — bulky diphenyl groups distributed along a dimethylsiloxane backbone — delivers higher thermal stability (continuous service to 250–300 °C), higher refractive index (1.420–1.510), and higher oxidative and radiation resistance compared to standard PDMS, while trimethylsilyl end-capping renders these fluids fully non-reactive.

LF-PM12 occupies a distinct position relative to LF-PM11 (phenylmethyl backbone, reactive end groups available) and LF-OHP2 (all-diphenyl backbone, silanol-terminated reactive polymer): LF-PM12 is a non-reactive, trimethyl-terminated functional fluid optimized for use as a heat-transfer medium, dielectric fluid, optical blending component, or cosmetic emollient rather than as a curable base polymer.

# DIPHENYL SILICONE FLUID LF-PM12 (CONTINUED)

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-PM12A | LF-PM12B | LF-PM12D |
|---|---|---|---|
| Chemical Name | Diphenyl Dimethyl Polysiloxane | | |
| Synonyms | Diphenyl Silicone Oil; Polydiphenyldimethylsiloxane; Phenyl Dimethicone | | |
| CAS No. | 68083-14-7 | | |
| Molecular Formula | $(CH_3)_3SiO[(C_6H_5)_2SiO]_m[(CH_3)_2SiO]_nSi(CH_3)_3$ | | |
| Appearance | Colorless to yellowish transparent liquid | | |
| Viscosity (25 °C, mPa·s) | 50-3000 | 150-250 | 400-500 |
| Refractive Index (25 °C, nD25) | 1.4200~1.4400 Low Diphenyl Content | 1.4800~1.5000 Medium Diphenyl Content | 1.5000~1.5100 High Diphenyl Content |

## Features:

- Continuous high-temperature service to 250–300 °C: exceeds standard PDMS (200 °C) and LF-PM11 (200 °C) limits
- Tunable refractive index from 1.420 to 1.510 across the three grades via diphenyl content adjustment
- Non-reactive, trimethylsilyl-terminated: fully compatible with both addition-cure and condensation-cure silicone systems as a non-crosslinking blending component
- INCI-recognized as Phenyl Dimethicone: suitable for cosmetic formulation without additional chemical registration in most markets
- High oxidative, UV, and radiation resistance from diphenylsiloxane units.

## Applications:

**1. Cosmetics and Personal Care.** LF-PM12B and LF-PM12D are used as emollient and gloss-enhancing additives in hair serums, lipsticks, lip glosses, liquid foundations, and sunscreen formulations. High refractive index (up to 1.510) imparts mirror-like shine and color depth in color cosmetics. Non-greasy, breathable skin feel and good water repellency — properties derived from the silicone backbone — distinguish LF-PM12 from conventional organic emollients. INCI name: Phenyl Dimethicone. Confirm regulatory compliance (COSMOS, REACH, China GB standards) for target market before incorporating into finished personal care products.

**2. Optical Blending and LED Encapsulation.** LF-PM12B and LF-PM12D serve as non-reactive, high-RI blending components in two-part addition-cure LED encapsulant formulations to fine-tune the refractive index of the cured system without introducing additional crosslinkable groups. Used alongside reactive base polymers (LF-OHP2, LF-OHPM) and crosslinkers (LF-PH11) where RI adjustment is required but an increase in crosslinker Si–H content is not desirable. Non-reactive nature means LF-PM12 functions as a plasticizer-type diluent — optimize loading level to avoid phase separation or bleed-out in the cured network; verify compatibility via cured sample testing.

# DIPHENYL SILICONE FLUID LF-PM12 (CONTINUED)

**3. Extreme-Temperature Industrial Fluids.** LF-PM12A, with continuous service capability to 250–300 °C, is used as a high-temperature dielectric fluid in power transformers, a heat-transfer medium in industrial thermal systems, and a base oil for extreme-duty lubricating greases and mold release agents operating above the service limit of standard PDMS fluids (~200 °C). Diphenylsiloxane units in the backbone raise the thermal oxidative degradation onset significantly above that of dimethylsiloxane-only fluids. Broad viscosity range of LF-PM12A (50–3,000 mPa·s) enables grade selection optimized for system flow and heat-transfer requirements.

## Package & Storage:

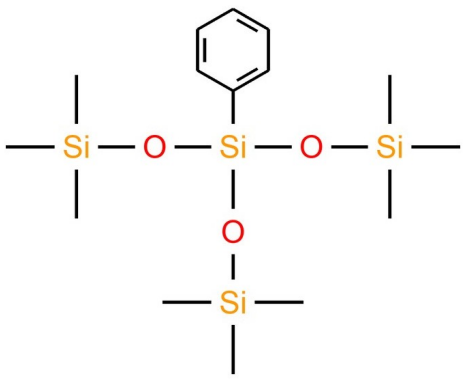
In 25 kg and 200 kg drum.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

# PHENYL SILOXANE LF-PM13

## Description:

Silfluo LF-PM13 is a highly purified triphenyl(trimethylsilyloxy)siloxane oligomer — a low-molecular-weight, phenyl-rich siloxane with a fixed structure rather than a broad-distribution polymer chain, delivering a defined refractive index of 1.498 and a low viscosity of 15 mPa·s.
Its oligomeric nature, combined with a high proportion of phenyl groups, produces a combination not achievable with standard phenylmethyl polymer fluids: high refractive index (~1.50), ultra-low viscosity, and cyclic siloxane content (D4/D5/D6 < 0.1%), the last of which is a direct compliance requirement for cosmetic use under EU REACH Regulation and increasingly under China and UK regulatory frameworks.
LF-PM13 is non-reactive and fully non-crosslinkable — it functions as a high-RI blending component, optical matching fluid, emollient, or dielectric additive across systems, compatible with addition-cure silicones, condensation-cure silicones, organic resins, and cosmetic waxes without catalyst interference.

## Chemical Structure:



# PHENYL SILOXANE LF-PM13 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PM13 |
| Chemical Name / Synonyms | Triphenyl (trimethylsilyloxy)siloxane Phenyl Siloxane Oligomer; High-Index Phenyl Siloxane; Phenyl-Modified Silicone Fluid; |
| Appearance | Colorless transparent liquid |
| Viscosity (25 °C, mPa·s) | 15 |
| Refractive Index (25 °C, nD25) | 1.498 |
| Cyclic Siloxane Content (D4/D5/D6) | <0.1% |

## Features:

- Low viscosity (15 mPa·s) : highest spreadability and processability in the LF-PM phenyl silicone fluid series
- High refractive index (1.498) : comparable to LF-PM12D at significantly lower viscosity
- D4/D5/D6 cyclic siloxane content < 0.1%: EU REACH compliant; suitable for EU, UK, and regulated cosmetic markets
- Thermal stability to 250–300 °C: equivalent to LF-PM12 polymer series
- Fully non-reactive: compatible with addition-cure, condensation-cure, and organic resin systems without catalyst interference

## Applications:

**1. Cosmetics and Personal Care.** LF-PM13 is used as a high-gloss emollient in hair serums, lipsticks, lip glosses, liquid foundations, and skincare formulations where both optical gloss (RI ~1.498) and strict cyclic siloxane compliance (D4/D5/D6 < 0.1%) are required simultaneously. Low viscosity (15 mPa·s) delivers rapid spreading, a non-greasy skin feel, and good water repellency. REACH compliance on cyclic siloxanes addresses EU Annex XVII restrictions on D4 and D5 in wash-off and leave-on cosmetics, making LF-PM13 a suitable option over standard phenyl silicone fluids for EU and UK markets. Confirm current applicable regulatory limits and test method requirements with your regulatory team before product registration.

**2. Optical Matching and LED Encapsulant Blending.** Used as a high-RI optical matching fluid for fiber optic coupling, LED chip encapsulation, and optical lens assembly where RI ~1.498 reduces interface reflection losses. Functions as a low-viscosity RI-tuning diluent in two-part addition-cure or condensation-cure optical encapsulant formulations — low viscosity reduces compound processing viscosity and improves bubble release during potting. Non-reactive nature eliminates any risk of Pt catalyst poisoning or interference with crosslink stoichiometry. Verify compatibility and absence of bleed-out or phase separation in cured encapsulant systems via accelerated aging and optical transmission testing.

**3. High-Performance Industrial Coatings.** Used as a heat-resistant, anti-corrosion additive in industrial coatings for exhaust systems, engine components, and marine protective finishes where continuous service temperature reaches 250–300 °C. Broad compatibility with organic resins (epoxies, acrylics, polyimides) allows blending without phase separation; phenyl groups contribute thermal oxidative stability and surface hydrophobicity to the cured coating film.

**4. Electronic Dielectric Fluids and Conformal Coatings.** Used as a thermally stable dielectric fluid and conformal coating base for sensitive electronics in extreme thermal environments. Low viscosity gives good substrate penetration and coverage; high phenyl content provides dielectric stability and thermal resistance at operating temperatures where standard PDMS-based dielectrics degrade.

# PHENYL SILOXANE LF-PM13 (CONTINUED)

**5. High-Temperature Specialty Lubricants.** Formulated into lubricating oils and greases for high-temperature machinery, bearings, and mechanisms where the combination of low base viscosity, thermal stability to 300 °C, and chemical inertness is required. Phenyl groups raise the oxidative stability relative to PDMS-based lubricant base oils.

## Package & Storage:

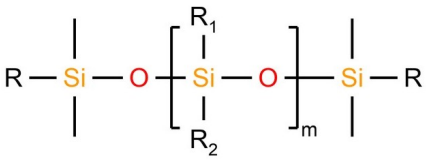
In 200 kg drum, 950 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 30 months from the date of production. Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

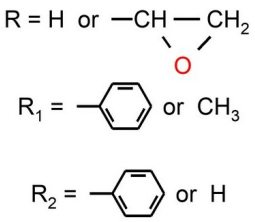
# EPOXY-FUNCTIONAL PHENYL METHYL SILICONE FLUID LF-PME11

## Description:

Silfluo LF-PME11 is an epoxy-functional phenyl methyl silicone fluid for reactive resin modification. It combines a silicone backbone with epoxy functionality for incorporation into organic resin systems.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PME11 |
| Appearance | Colorless transparent liquid |
| Epoxy Equivalent Weight (g/eq) | 260–340 |
| Kinematic Viscosity (25 °C, cSt) | 30–50 |
| Refractive Index (25 °C) | 1.50–1.51 |

# EPOXY-FUNCTIONAL PHENYL METHYL SILICONE FLUID LF-PME11 (CONTINUED)

## Applications:

**1. Epoxy resins.** Used as a reactive silicone component in epoxy resin formulations to modify cohesion and performance at high and low temperatures.

**2. Polyurethane and polycarbonate modification.** Used as a reactive modifier to introduce silicone segments into polyurethane and polycarbonate resin systems.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

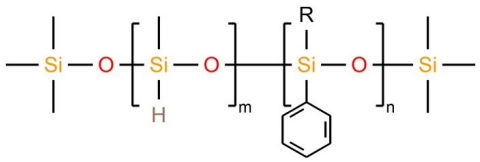
Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# PHENYL HYDROGEN SILICONE FLUID LF-PH11

## Description:

Silfluo LF-PH11 is a series of phenyl-modified, Si-H-functional silicone fluids available as LF-PH11-50 and LF-PH11-43. The grades share the specified viscosity range but differ in hydrogen content and refractive index.
LF-PH11-50 has the higher refractive index, while LF-PH11-43 has the higher hydrogen content. In compatible platinum-catalyzed addition-cure formulations, their Si-H groups can react with vinyl-functional silicone components. Select the grade based on reactive-group balance, optical requirements, and formulation testing.

## Chemical Structure:




R = $CH_3$ or 

## Typical Technical Properties:

| Silfluo Code | LF-PH11-50 | LF-PH11-43 |
|---|---|---|
| Appearance (Visual) | Colorless Transparent Liquid | Colorless Transparent Liquid |
| Viscosity (25 °C, mPa·s) | 50~150 | 50~150 |
| Hydrogen Content (wt.%) | 0.55~0.65 | 0.70~0.80 |
| Refractive Index (25 °C) | 1.50~1.53 | 1.43~1.44 |

# PHENYL HYDROGEN SILICONE FLUID LF-PH11 (CONTINUED)

## Applications:

**1. LED Encapsulation Formulations.** Si-H-functional ingredients for phenyl silicone formulation development. LF-PH11-50 can be evaluated where a higher-refractive-index Si-H ingredient is sought; LF-PH11-43 provides a lower-refractive-index option.

**2. Electrical Insulation Formulations.** Si-H-functional ingredients for compatible vinyl-functional silicone insulation systems.

**3. Reactive Silicone Resin Modification.** Reactive ingredients for compatible vinyl-functional silicone resin systems.

## Package & Storage:

Packed in 25 kg and 200 kg drums.

Store in a cool, dry, well-ventilated place away from direct sunlight and fire sources. In unopened containers, shelf life is 12 months from the date of production. Storage beyond this period does not necessarily make the product unusable; verify the properties required for the intended use before use.

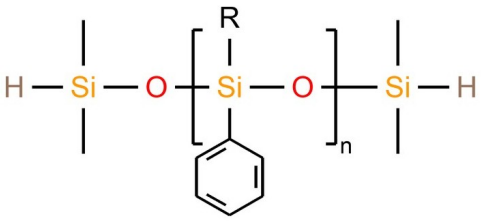
# HYDRIDE-TERMINATED PHENYL SILICONE FLUID LF-PH12

## Description:

Silfluo LF-PH12 is a hydride-terminated phenyl silicone fluid available as LF-PH12-55. It is a colorless transparent liquid with terminal Si-H functionality.

The terminal Si-H groups can react with vinyl-functional silicone components in compatible platinum-catalyzed addition-cure formulations. The resulting chain architecture and cured properties depend on the functionality and proportions of the other formulation ingredients.

## Chemical Structure:




R = $CH_3$ or 

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PH12-55 |
| Appearance (Visual) | Colorless Transparent Liquid |
| Viscosity (25 °C, mPa·s) | 50~150 |
| Hydrogen Content (wt.%) | 0.3~0.35 |
| Refractive Index (25 °C) | 1.54~1.55 |

# HYDRIDE-TERMINATED PHENYL SILICONE FLUID LF-PH12 (CONTINUED)

## Applications:

**1. LED Encapsulation Formulations.** A hydride-terminated phenyl silicone ingredient for formulation development where a higher-refractive-index Si-H component is sought.

**2. Electrical Insulation Formulations.** A reactive ingredient for compatible vinyl-functional silicone insulation systems.

**3. Reactive Silicone Resin Modification.** Terminal Si-H functionality can be used in compatible vinyl-functional silicone resin systems.

## Package & Storage:

Packed in 25 kg and 200 kg drums.

Store in a cool, dry, well-ventilated place away from direct sunlight and fire sources. In unopened containers, shelf life is 12 months from the date of production. Storage beyond this period does not necessarily make the product unusable; verify the properties required for the intended use before use.

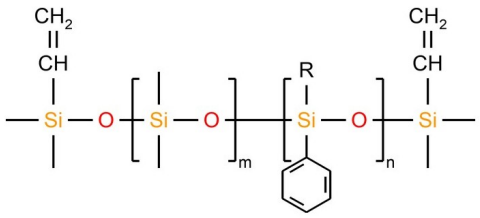
# PHENYL VINYL SILICONE FLUID LF-PV11

## Description:

Silfluo LF-PV11 is a series of vinyl-functional phenyl silicone fluids available as LF-PV11-43 and LF-PV11-53. The grades differ in viscosity, vinyl content, and refractive index.

LF-PV11-43 is the higher-viscosity, lower-vinyl grade, while LF-PV11-53 is the lower-viscosity, higher-vinyl grade with a higher refractive index. In compatible platinum-catalyzed formulations, their vinyl groups can react with Si-H-functional silicone components. Cured properties depend on the complete formulation and cure conditions.

## Chemical Structure:




R = $CH_3$ or 

## Typical Technical Properties:

| Silfluo Code | LF-PV11-43 | LF-PV11-53 |
|---|---|---|
| Appearance (Visual) | Colorless Transparent Liquid | Colorless Transparent Liquid |
| Viscosity (25 °C, mPa·s) | 5000~8000 | 20~100 |
| Vinyl Content (wt.%) | 0.06~0.10 | 8~9 |
| Refractive Index (25 °C) | 1.43~1.44 | 1.53~1.54 |

# PHENYL VINYL SILICONE FLUID LF-PV11 (CONTINUED)

## Applications:

**1. LED Encapsulation Formulations.** Vinyl-functional ingredients for phenyl silicone formulation development. LF-PV11-53 can be evaluated where a higher-refractive-index vinyl ingredient is sought; LF-PV11-43 provides a higher-viscosity, lower-refractive-index option.

**2. Electrical Insulation Formulations.** Vinyl-functional ingredients for compatible addition-cure silicone insulation systems.

**3. Reactive Silicone Resin Modification.** Reactive ingredients for compatible Si-H-functional silicone resin systems.

## Package & Storage:

Packed in 25 kg and 200 kg drums.

Store in a cool, dry, well-ventilated place away from direct sunlight and fire sources. In unopened containers, shelf life is 12 months from the date of production. Storage beyond this period does not necessarily make the product unusable; verify the properties required for the intended use before use.

## FLUOROSILICONE FLUIDS

# METHYL-TERMINATED FLUOROSILICONE FLUID LF-MF11

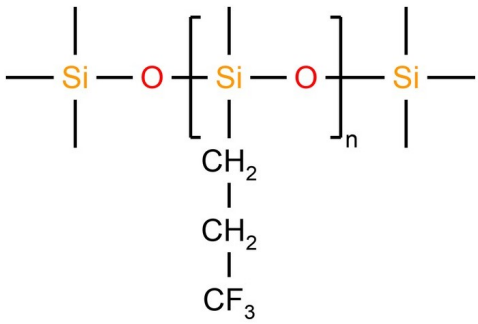
## Description:

Silfluo LF-MF11 is a series of trimethylsiloxy-terminated fluorosilicone fluids consisting of poly(3,3,3-trifluoropropylmethylsiloxane) or copolymers comprising fluorosiloxane and siloxane units, with trifluoropropyl groups pendant from the siloxane backbone.

The fluids are designed for a broad operating temperature range of approximately -60 °C to +200 °C. Actual long-term temperature capability and low-temperature flowability depend on the viscosity grade, fluorine content and operating environment and must be confirmed by grade-specific testing.

They feature low surface tension, good water repellency and moisture resistance, distinctive lubricity, high chemical stability, and good electrical insulating properties. The trifluoropropyl groups also contribute to resistance to hydrocarbon oils, fuels and selected organic solvents.

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-MF11-LT | LF-MF11-MT | LF-MF11-MF | LF-MF11-HQ |
|---|---|---|---|---|
| Viscosity (25 °C, mm²/s [cSt]) | 30-20,000 | | | |
| Appearance | Colorless to pale yellow transparent oily liquid | | | |
| Refractive Index (25 °C) | 1.380-1.400 | | | |
| Density (25 °C, g/cm³) | 1.00-1.30 | | | |
| Notes | Viscosity and fluorine content can be customized. Typical values; not for specification. | | | |

## Applications:

**1. Non-Aqueous Antifoam and Foam-Control Formulations.** Can be evaluated as an active fluid in antifoam formulations for solvent-based coatings, petrochemical processing, oil and gas separation and other non-aqueous systems, particularly where conventional PDMS fluids are soluble or ineffective. The optimum grade, carrier and addition level must be established in the actual process medium.

**2. Fuel- and Solvent-Resistant Lubricants and Greases.** Can be used as a base fluid or formulation component for specialty lubricants, greases and release lubricants exposed to fuels, oils or selected solvents. Use on medical-device components requires separate biocompatibility, extractables, process and regulatory qualification; this TDS does not establish medical compliance.

# METHYL-TERMINATED FLUOROSILICONE FLUID LF-MF11 (CONTINUED)

**3. Damping and Buffer Fluids.** Suitable for evaluation in precision instruments, electronic components and mechanical damping or buffer systems that may contact fuels, solvents or selected polar media. Select viscosity against damping response, operating temperature, material compatibility and required electrical properties.
**4. Release Agent for Rubber and Thermoplastics.** Can be evaluated as an external or formulated release agent for silicone rubber, fluororubber and compatible thermoplastics. Release efficiency, transfer, surface appearance, downstream adhesion and paintability must be checked on the actual material and process.
**5. Water- and Oil-Repellent Surface-Treatment Component.** Can be used as a formulation component for treating textiles, leather and glass fibers where water repellency, oil repellency, stain resistance and corrosion-protection/barrier performance are required. Because the fluid is methyl-terminated and non-reactive, treatment durability depends on the carrier, binder, application process and substrate adhesion; it is not a standalone corrosion inhibitor.

## Package & Storage:

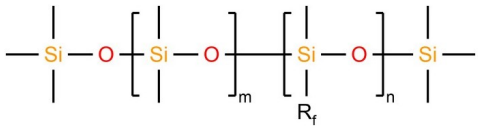
Available in 5 kg, 20 kg, 25 kg and 200 kg plastic or steel drums.
Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Transport as non-dangerous goods, subject to the current SDS and applicable regulations.
Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use.

# METHYL FLUOROSILICONE COPOLYMER FLUID LF-CMF11

## Description:

Silfluo LF-CMF11 is a series of methyl fluorosilicone copolymer fluids (CAS 115361-68-7) available with customized viscosity. It is supplied as a colorless to pale yellow transparent liquid.
Product viscosity is confirmed in the agreed product specification for each order.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-CMF11 |
| CAS No. | 115361-68-7 |
| Viscosity (25 °C, mPa·s) | Customizable; confirmed in the agreed product specification |
| Appearance | Colorless to pale yellow transparent liquid |

# METHYL FLUOROSILICONE COPOLYMER FLUID LF-CMF11 (CONTINUED)

## Applications:

**1. High-Speed Bearing Lubrication in Chemical Media.** Can be evaluated for lubricating high-speed bearings operating in chemical media.

**2. Mechanical Components Exposed to Fuels, Oils and Solvents.** Can be evaluated as a lubricant or lubricant-formulation component for valves, bearings, gears, seals, gaskets and other mechanical parts that may contact fuels, lubricating oils or solvents. Product suitability should be confirmed under actual operating conditions.

## Package & Storage:

Available in 5 kg, 20 kg, 25 kg and 200 kg plastic or steel drums.

Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Transport as non-dangerous goods, subject to the current SDS and applicable regulations.

Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use.

# VINYL-FUNCTIONAL FLUOROSILICONE FLUID LF-VF11

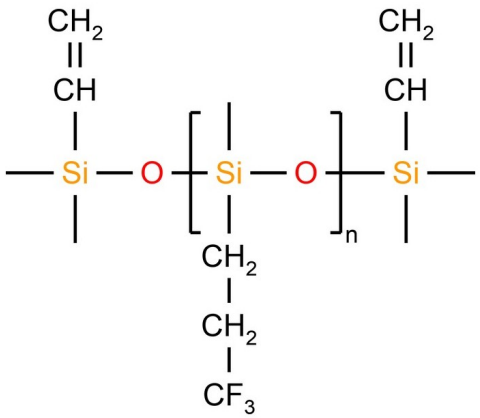
## Description:

Silfluo LF-VF11 is a series of vinyl-functional fluorosilicone fluids (vinyl fluorosilicone oils) containing trifluoropropyl side groups. Depending on the grade, the vinyl functionality may be terminal or terminal/pendant.

The trifluoropropyl groups improve resistance to oils and organic solvents and contribute to improved weathering and aging resistance compared with conventional dimethyl silicone fluids.

The vinyl groups can react with Si-H-functional silicone fluids through platinum-catalyzed hydrosilylation, making LF-VF11 suitable as a reactive base fluid for addition-cure fluorosilicone systems.

## Chemical Structure:



# VINYL-FUNCTIONAL FLUOROSILICONE FLUID LF-VF11 (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-VF11-LT | LF-VF11-MT | LF-VF11-MF | LF-VF11-HQ |
|---|---|---|---|---|
| Chemical Name / Synonyms | Vinyl-Functional Fluorosilicone Fluid Vinyl Fluorosilicone Oil; Vinyl-Functional Trifluoropropyl Polysiloxane | | | |
| Appearance | Colorless to pale yellow transparent fluid | | | |
| Kinematic Viscosity (25 °C, mm²/s, cSt) | 50-50,000 | | | |
| Refractive Index (25 °C) | 1.380-1.400 | | | |
| Density (25 °C, g/cm³) | 1.00-1.30 | | | |
| Vinyl Content | Grade-dependent and matched to viscosity; terminal vinyl functionality can be adjusted. | | | |
| Trifluoropropyl Content (nominal) | LT: 10 wt%; MT: 30 wt%; MF: 50 wt%; HQ: 80 wt% | | | |
| Notes | Viscosity and fluorine content can be customized according to customer requirements. | | | |

## Applications:

**1. Addition-Cure Fluorosilicone Elastomers.** Used as a reactive base fluid in addition-cure fluorosilicone elastomer formulations, including liquid fluorosilicone rubber systems. Final cure properties depend on the complete formulation and should be verified by testing.

**2. Fluorosilicone Adhesives.** Suitable for developing fluorosilicone adhesive formulations where improved oil and solvent resistance is required.

**3. Low-Refractive-Index Optical Formulations.** The low refractive index supports formulation work for low-refractive-index adhesives, liquid-crystal display films and optically clear adhesive (OCA) systems. In properly formulated and cured systems, it may help achieve low dimensional change, low haze and a low yellowness index. These properties must be verified in the final formulation.

**4. Liquid Fluorosilicone Rubber and Potting Compounds.** LF-VF11 is typically combined with a compatible Si-H-functional fluorosilicone fluid and platinum catalyst in hydrosilylation-cure formulations for liquid fluorosilicone rubber, fluorosilicone potting compounds and related elastomers intended for oil-, solvent- and low-temperature-resistant applications. Finished formulations may be comparatively evaluated against Dow SILASTIC™ FL 9201 F-LSR performance targets. LF-VF11 is a reactive base fluid, not a ready-to-use equivalent.

## Package & Storage:

Available in 5 kg, 25 kg and 200 kg plastic or steel drums.

Keep away from strong oxidizing agents, corrosive materials and acids. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Transport as non-dangerous goods; refer to the latest SDS and applicable regulations. Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions.

# SILANOL-TERMINATED FLUOROSILICONE FLUID LF-HF11

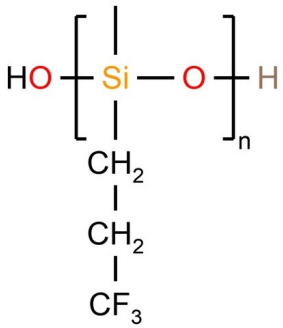
## Description:

Silfluo LF-HF11 is a series of silanol-terminated fluorosiloxane polymers or fluorosiloxane–siloxane copolymers bearing trifluoropropyl groups in the side chains. These products are also referred to as silanol-terminated fluorosilicone fluids or hydroxyl-terminated fluorosilicone oils.

The incorporated trifluoropropyl groups contribute to resistance to oils and organic solvents and to water- and oil-repellent properties. The silanol end groups provide condensation reactivity and interaction with hydroxyl-bearing filler surfaces, supporting use in fluorosilicone rubber and RTV fluorosilicone formulation development.

Low-molecular-weight grades provide hydroxyl contents of 3.5-6.0 wt.% or at least 8.0 wt.% at viscosities of 40-100 cSt. Higher-viscosity grades are available at nominal viscosities of 1,000 and 5,000 cSt. Final processing and cured properties depend on the complete formulation and must be verified by application testing.

## Chemical Structure:




## Typical Technical Properties:

| | Low-Molecular-Weight Grades | | | Higher-Viscosity Grades | |
|---|---|---|---|---|---|
| Silfluo Code | LF-HF11-MF50 | LF-HF11-HS50 | LF-HF11-HX80 | LF-HF11-HX1000 | LF-HF11-HX5000 |
| OH Content (wt.%) | 3.5-6.0 | 3.5-6.0 | ≥8.0 | — | — |
| Viscosity (25 °C, mm²/s [cSt]) | 40-60 | 40-60 | 60-100 | 1,000 | 5,000 |
| Appearance | Colorless to pale yellow transparent oily liquid | | | | |
| Refractive Index (25 °C) | 1.380-1.400 | | | | |
| Density (25 °C, g/cm³) | 1.00-1.30 | | | | |
| Flash Point (°C) | >240 | | | | |
| Volatiles (200 °C, 4 h), wt.% | <5 | | | | |
| Notes | Viscosity and fluorine content can be customized. Typical values; not for specification. | | | | |

## Applications:

**1. Structure-Control and Processing Aid for Fluorosilicone Rubber.** Low-molecular-weight LF-HF11 grades can be evaluated as structure-control agents in fluorosilicone rubber compounding. Silanol-silica interactions can help control viscosity, reduce storage hardening and improve processability. They may also modify conventional silicone rubber where some improvement in oil and solvent resistance is sought; compatibility, dosage and cured properties must be confirmed by trials.

# SILANOL-TERMINATED FLUOROSILICONE FLUID LF-HF11 (CONTINUED)

**2. Base Fluid and Reactive Diluent for Condensation-Cure RTV Fluorosilicone.** The 1,000 and 5,000 cSt grades can be evaluated as base fluids or reactive diluents in condensation-cure RTV fluorosilicone sealants, mold-making rubbers, adhesives and coatings intended for oil- or solvent-exposure environments. Reactive Si-OH end groups can condense with suitable multifunctional silane crosslinkers in the presence of an appropriate catalyst. Crosslinker level, catalyst, filler compatibility, cure conditions and final performance must be established in the complete formulation.

## Package & Storage:

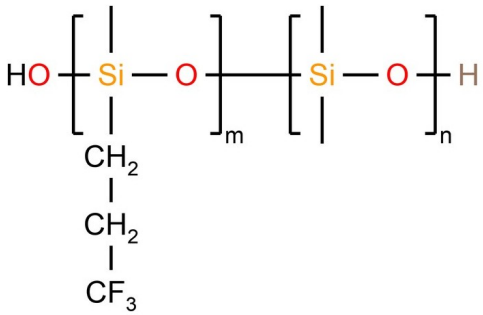
Available in 5 kg, 25 kg and 200 kg plastic or steel drums.
Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Transport as non-dangerous goods, subject to the latest SDS and applicable regulations.
Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use.

# HYDROXYL FLUOROSILICONE COPOLYMER FLUID LF-CHF11

## Description:

Silfluo LF-CHF11 is a hydroxyl fluorosilicone copolymer fluid for use as an intermediate and formulation ingredient in fluorosilicone rubber, repellent treatments, defoamers, lubricants and textile finishing auxiliaries. Product specifications vary with fluorine content.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Viscosity (mPa·s) | 50–50,000 |
| Specification basis | Varies with fluorine content |

## Applications:

**1. Fluorosilicone Rubber.** For use as an intermediate, molecular weight regulator and processing aid in fluorosilicone rubber production and compounding.

# HYDROXYL FLUOROSILICONE COPOLYMER FLUID LF-CHF11 (CONTINUED)

**2. Repellent, Defoamer and Lubricant Formulations.** For use as a raw material in water- and oil-repellent agents, defoamers and lubricating oils.

**3. Textile Finishing.** For incorporation into textile auxiliaries where water repellency, oil repellency and a smooth hand are desired.

## Packing:

Net weights: 200 kg, 25 kg, 10 kg, 5 kg and 1 kg.

# HYDROGEN-FUNCTIONAL FLUOROSILICONE FLUID LF-HF12

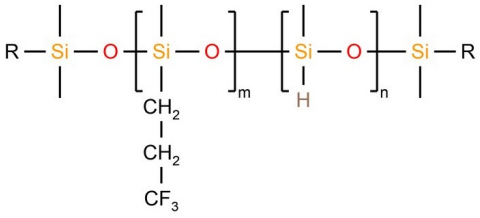
## Description:

Silfluo LF-HF12 is a series of hydrogen-functional fluorosilicone fluids (Si-H-functional fluorosilicone oils) containing trifluoropropyl groups and reactive Si-H functionality. Depending on the grade, Si-H groups are terminal, pendant, or both terminal and pendant.

The incorporated trifluoropropyl groups contribute to oil and solvent resistance and to water- and oil-repellent properties, while the Si-H groups react with vinyl-functional fluorosilicone polymers through platinum-catalyzed hydrosilylation. LF-HF12 can therefore be evaluated as a crosslinker for addition-cure fluorosilicone systems.

Five grades cover three Si-H distributions and nominal Si-H contents from 0.03 to 0.80 wt%. Grade selection and the Si-H-to-vinyl ratio influence crosslink density, cure response and final properties; the complete formulation must be validated by the customer.

## Chemical Structure:



# HYDROGEN-FUNCTIONAL FLUOROSILICONE FLUID LF-HF12 (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-HF12-M20 | LF-HF12-M80 | LF-HF12-TS45 | LF-HF12-TS40 | LF-HF12-T03 |
|---|---|---|---|---|---|
| Functional Type | Methyl-terminated, pendant Si-H fluorosilicone fluid | | Terminal and pendant Si-H fluorosilicone fluid | | Hydrogen-terminated fluorosilicone fluid |
| Si-H Content (wt%) | 0.20 | 0.80 | 0.45 | 0.40 | 0.03 |
| Kinematic Viscosity (25 °C, mm²/s [cSt]) | 20-100 | | | | 200 |
| Appearance | Colorless transparent oily liquid | | | | |
| Density (25 °C, g/cm³) | 1.00-1.30 | | | | |
| Refractive Index (25 °C) | 1.380-1.400 | | | | |
| Notes | Viscosity and Si-H content can be customized. Code suffix: M = methyl-terminated/pendant Si-H; TS = terminal + pendant Si-H; T = terminal Si-H; number = nominal Si-H content (wt%) x100. | | | | |

## Applications:

**1. Addition-Cure Fluorosilicone Systems.** Crosslinker for platinum-catalyzed fluorosilicone rubber, fluorosilicone potting compounds, fluorosilicone gels, fluorosilicone adhesives and fluorosilicone release-coating or release-liner formulations. Compatibility, catalyst inhibition, Si-H-to-vinyl ratio and cure conditions must be confirmed in the final formulation.

**2. Water- and Oil-Repellent Surface Treatment.** After suitable formulation and catalysis, LF-HF12 may be evaluated for water- and oil-repellent treatment of rubber, textiles, glass, ceramics, paper, leather, metals, cement and marble. Application-specific testing is required to confirm film formation, repellency and substrate compatibility.

**3. Reactive Intermediate for Hydrosilylation.** Reactive Si-H functionality allows hydrosilylation with vinyl or other compatible unsaturated groups, supporting the development of fluorosilicone networks and modified materials. Reaction design and safety controls must be established by qualified formulators.

## Package & Storage:

Available in 5 kg, 25 kg and 200 kg plastic or steel drums.

Keep away from strong oxidizing agents, corrosive materials and acids. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Avoid unintended contact with moisture, alcohols, acids, alkalis and metal catalysts because Si-H materials may release hydrogen. Transport as non-dangerous goods, subject to the latest SDS and applicable regulations. Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions.

# SILANOL- AND VINYL-FUNCTIONAL FLUOROSILICONE FLUID LF-VHF13

## Description:

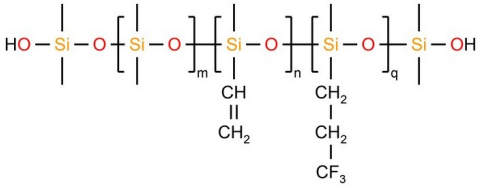
Silfluo LF-VHF13 is a silanol-terminated fluorosiloxane polymer or fluorosiloxane-siloxane copolymer containing pendant vinyl and trifluoropropyl groups. Depending on the molecular structure, vinyl functionality may also be introduced at pendant or terminal positions as reactive groups.

The incorporated trifluoropropyl groups impart oil resistance, solvent resistance, and water- and oil-repellent properties.

The product contains both hydroxyl and vinyl reactive groups. The hydroxyl groups enable surface treatment of powder materials and allow vinyl functionality to be introduced onto the treated powder surfaces, thereby increasing the crosslink density of the system.

LF-VHF13-MF50 has a viscosity of 30-100 mm²/s [cSt], a vinyl content of 5 wt.%, and a silanol (OH) content of 3-8 wt. %.

## Chemical Structure:



## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-VHF13-MF50 |
| Viscosity (25 °C, mm²/s [cSt]) | 30-100 |
| Vinyl Content (wt.%) | 5 |
| Silanol (OH) Content (wt.%) | 3-8 |
| Appearance | Colorless to pale yellow transparent oily liquid |
| Refractive Index (25 °C) | 1.380-1.400 |
| Density (25 °C, g/cm³) | 1.00-1.30 |
| Notes | Typical values; not for specification. Functional-group content and viscosity can be customized. |

## Applications:

**Structure-Control Agent for Fluorosilicone and Silicone Rubber.** LF-VHF13 provides functions similar to those of low-molecular-weight hydroxyl-functional fluorosilicone fluids. It can be used as an effective structure-control agent for fluorosilicone rubber to increase crosslink density. It can also be used as a structure-control agent for conventional silicone rubber. The incorporated fluorinated groups provide some of the oil resistance associated with fluorosilicone rubber, making the product suitable for cost-effective oil-resistant silicone rubber formulations.

## Package & Storage:

Available in 5 kg, 25 kg and 200 kg plastic or steel drums.

# SILANOL- AND VINYL-FUNCTIONAL FLUOROSILICONE FLUID LF-VHF13 (CONTINUED)

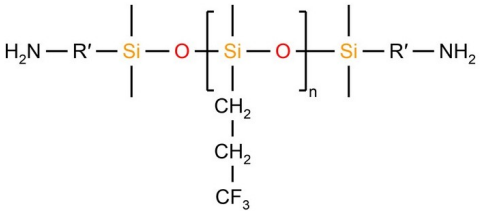
Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Transport as non-dangerous goods, subject to the current SDS and applicable regulations.
Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use.

# AMINO-FUNCTIONAL FLUOROSILICONE FLUID LF-AF11

## Description:

Silfluo LF-AF11 is a series of amino-functional fluorosilicone fluids comprising fluorosiloxane polymers or fluorosiloxane-siloxane copolymers with amino-functional end groups and pendant trifluoropropyl groups.
The incorporated trifluoropropyl groups contribute to resistance to oils and selected organic solvents. The reactive amino groups can react with isocyanate groups, enabling fluorosilicone segments to be incorporated into polyurethane systems through urea linkages.
Available grades provide nominal viscosities of 200-3,000 mPa·s and amine values of 0.1-0.4 mmol/g. Grade selection, active-hydrogen-to-NCO stoichiometry, compatibility, pot life and final performance must be confirmed in the complete formulation.

## Chemical Structure:




R′ = alkylene linker

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-AF11 |
| Chemical Name / Synonyms | Amino-Functional Fluorosilicone Fluid; Amino-Functional Fluorosilicone Oil |
| Appearance | Transparent or translucent viscous liquid |
| Viscosity (25 °C, mPa·s) | 200-3,000 |
| Amine Value (mmol/g) | 0.1-0.4 |
| Refractive Index (25 °C) | 1.3800 ± 0.01 |
| Density (25 °C, g/cm³) | — |
| pH (test medium/method to be confirmed) | 7.0-8.0 |
| Notes | Viscosity and amine value can be customized. Typical values; not for specification. |

# AMINO-FUNCTIONAL FLUOROSILICONE FLUID LF-AF11 (CONTINUED)

## Applications:

**1. Reactive Modifier for Polyurethane Coatings and Inks.** LF-AF11 may be evaluated as a reactive fluorosilicone modifier for polyurethane coatings and inks. Reaction of amino functionality with isocyanates can chemically introduce fluorosilicone segments into the binder. Depending on formulation and surface enrichment, it may contribute to oil and solvent resistance, slip, stain resistance and easy-clean performance. Compatibility, catalyst effects, cure response, adhesion and final film properties must be verified.

**2. Polyurethane Elastomers, Plastics and Resin Modification.** The product may be evaluated in polyurethane elastomers, plastics and other compatible resin systems where reactive amino functionality and a fluorosilicone segment are required. The amino-isocyanate reaction is typically rapid; addition sequence, moisture control, temperature and NCO index should be established by qualified formulators.

**3. Textile and Surface-Treatment Formulation Development.** Consistent with reactive amino-modified silicone chemistry, LF-AF11 may also be screened as a component of textile-finishing or surface-treatment formulations where lubricity, water repellency and affinity to substrates are sought together with oil- and solvent-resistant fluorosilicone character. This TDS does not establish wash durability, repellency ratings or use level; these must be determined for each substrate and process.

## Package & Storage:

Available packaging indicated in the supplied product information: 100 g, 1 kg, 5 kg and 10 kg pails; and 20 kg, 25 kg and 200 kg plastic or steel drums. Confirm pack type and availability when ordering.

Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed in a cool, dry, well-ventilated place, protected from direct sunlight, rain, heat and open flames. Avoid moisture contamination.

Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use.

Transport as non-dangerous goods, subject to the current SDS and applicable transport regulations.

# CARBINOL-FUNCTIONAL FLUOROSILICONE FLUID LF-CF11

## Description:

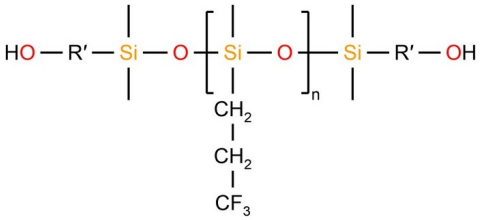
Silfluo LF-CF11 is a carbinol-functional fluorosilicone fluid comprising a fluorosiloxane polymer or fluorosiloxane-siloxane copolymer with carbon-bound hydroxyl end groups and pendant trifluoropropyl groups.

The incorporated trifluoropropyl groups contribute to resistance to oils and selected organic solvents. The reactive carbinol groups can react with isocyanate groups to form urethane linkages, enabling fluorosilicone segments to be chemically incorporated into polyurethane systems.

Carbinol functionality means an organic hydroxyl group connected to the siloxane through a Si-C linkage; it is distinct from silanol (Si-OH) functionality. Product-specific viscosity, hydroxyl value, refractive index and density must be confirmed before commercial release or specification use.

# CARBINOL-FUNCTIONAL FLUOROSILICONE FLUID LF-CF11 (CONTINUED)

## Chemical Structure:




R′ = alkylene linker

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-CF11 |
| Chemical Name / Synonyms | Carbinol-Functional Fluorosilicone Fluid; Carbon-Bound Hydroxyl-Functional Fluorosilicone Oil |
| Appearance | Colorless to pale yellow transparent liquid |
| Viscosity (25 °C, mm²/s [cSt]) | 1500-2000 |
| Hydroxyl Value (mg KOH/g) | 22-32 |
| Refractive Index (25 °C) | 1.380 |
| Density (25 °C, g/cm³) | 1.28 |
| Notes | Technical values are pending confirmation. Typical values must not be used as a specification. |

## Applications:

**1. Reactive Modifier for Polyurethane Coatings and Inks.** LF-CF11 may be evaluated as a reactive fluorosilicone modifier for polyurethane coatings and inks. Carbinol groups react with isocyanates to introduce fluorosilicone segments through urethane linkages. Depending on formulation and surface enrichment, the product may contribute to oil and solvent resistance, slip, stain resistance and easy-clean or self-cleaning performance. Compatibility, NCO-to-OH stoichiometry, catalyst, cure response, adhesion and final film properties must be verified.

**2. Polyurethane Elastomers, Plastics and Resin Modification.** The product may be evaluated in polyurethane elastomers, plastics and other compatible resin systems where a reactive carbon-bound hydroxyl group and fluorosilicone segment are required. It can be considered as a functional polymer modifier rather than a non-reactive silicone oil. Processing sequence, moisture control and final properties must be established in the formulation.

## Package & Storage:

Available in 5 kg, 20 kg, 25 kg and 200 kg plastic or steel drums. Confirm pack type and availability when ordering. Keep away from strong oxidizing agents, corrosive materials, acids and alkalis. Store tightly closed at ambient temperature in a dry, well-ventilated place, protected from direct sunlight and rain. Keep away from heat and open flames. Avoid moisture contamination.

## CARBINOL-FUNCTIONAL FLUOROSILICONE FLUID LF-CF11 (CONTINUED)

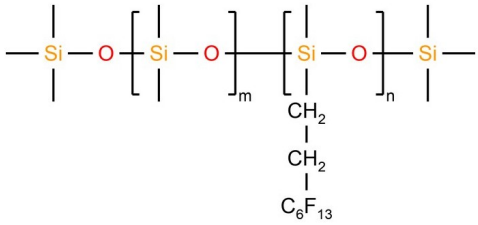
Recommended shelf life: 12 months from the date of manufacture under the recommended storage conditions. Material stored beyond this period should be re-evaluated against the applicable quality requirements before use. Transport as non-dangerous goods, subject to the current SDS and applicable transport regulations.

## PERFLUOROHEXYL SILICONE FLUID LF-PFH11

### Description:

Silfluo LF-PFH11 is a perfluorohexyl silicone fluid for water- and oil-repellent surface treatments and textile finishing auxiliaries. Applications include absorbent mineral substrates such as stone and concrete. Product specifications vary with fluorine content.

### Chemical Structure:




### Typical Technical Properties:

| | |
|---|---|
| Product type | Perfluorohexyl Silicone Fluid |
| Specification basis | Varies with fluorine content |

### Applications:

**1. Stone and Concrete Surface Treatments.** For formulating water- and oil-repellent treatments for absorbent stone and concrete. The intended treatment penetrates substrate pores to provide protection within and at the surface.

**2. Appearance and Breathability in Mineral Protection.** For treatment development where protection against water-related spotting, discoloration and whitening is desired while retaining substrate breathability.

**3. Textile Finishing.** For incorporation into textile auxiliaries to impart water repellency, oil repellency and a smooth hand.

### Packing:

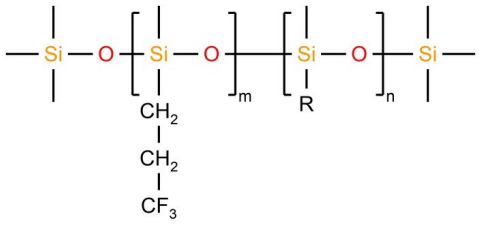
Net weights: 200 kg, 25 kg, 10 kg, 5 kg and 1 kg.

# POLYETHER-MODIFIED FLUOROSILOXANE LF-PEF11

## Description:

Silfluo LF-PEF11 is a polyether-modified fluorosiloxane for coating additives and foam-control formulations. Its stated uses include wetting, dispersing and leveling in coatings, as well as self-emulsifying defoamer formulations for aqueous systems and solvent-based defoamer systems.

## Chemical Structure:



$R = (CH_2)_3O(C_2H_4O)_a(C_3H_6O)_bR'$

## Typical Technical Properties:

| | |
|---|---|
| Appearance | Colorless or slightly yellow transparent liquid |
| Viscosity (mPa·s) | 100–5,000 |

## Applications:

**1. Coating Wetting, Dispersion and Leveling.** For use as a wetting, dispersing or leveling additive in coating formulations.

**2. Aqueous Foam-Control Formulations.** For use in the development of self-emulsifying defoamer formulations for aqueous systems.

**3. Solvent-Based Defoamer Systems.** For use in solvent-based defoamer formulations.

## Packing:

Net weights: 180 kg, 25 kg, 10 kg, 5 kg and 1 kg.

## VINYL SILICONE FLUIDS

# VINYL SILICONE FLUID (DIVINYL-TERMINATED) LF-VPDMS

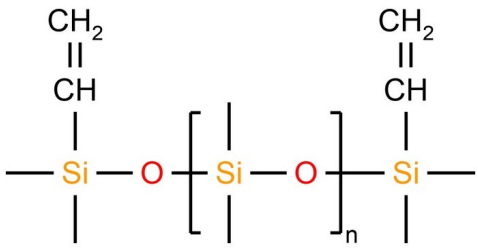
## Description:

Silfluo LF-VPDMS is a series of vinyl-terminated polydimethylsiloxane polymers (CAS 68083-19-2), the foundational base polymer for platinum-catalyzed addition-cure silicone systems, available in viscosity grades from 100 to 100,000 mPa·s with a custom grade (LF-VPDMS-X) available on request.

Terminal vinyl groups on both chain ends react with Si–H crosslinkers (LF-H101H, LF-H101L, LF-H101TS) via Pt-catalyzed hydrosilylation to form the cured siloxane elastomer network with no volatile by-products and very low shrinkage on cure — a fundamental distinction from condensation-cure (RTV/OH polymer) systems.

Vinyl content (mol%) decreases with increasing viscosity/molecular weight, as the two terminal vinyl groups represent a smaller proportion of the longer chain; this relationship determines the Si–H to vinyl stoichiometric ratio required for crosslinker calculation at each grade.

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-VPDMS-100 | LF-VPDMS-200 | LF-VPDMS-245 | LF-VPDMS-300 | LF-VPDMS-350 | LF-VPDMS-500 | LF-VPDMS-1000 |
|---|---|---|---|---|---|---|---|
| Chemical Name / Synonyms | Vinyl-Terminated Polydimethylsiloxane Vinyl Silicone Oil; Vinyl Silicone Fluid; Vi-PDMS; Di-vinyl terminated silicone oil; α,ω-Divinyl polydimethylsiloxane; Di-vi PDMS; Divinyl-terminated PDMS | | | | | | |
| CAS No. | 68083-19-2 | | | | | | |
| Viscosity (25 °C, mPa·s) | 100±5 | 200±10 | 245±15 | 300±15 | 350±20 | 500±25 | 1000±50 |
| Vinyl Content, mol% | 2.86±0.03 | 1.89±0.03 | 1.70±0.03 | 1.54±0.03 | 1.51±0.03 | 1.16±0.05 | 0.86±0.05 |
| Volatile (150 °C, 3 h)/% | ≤1.00 | | | | | | |
| Item | LF-VPDMS-2000 | LF-VPDMS-5000 | LF-VPDMS-10000 | LF-VPDMS-20000 | LF-VPDMS-60000 | LF-VPDMS-100000 | LF-VPDMS-X |
| Viscosity (25 °C, mPa·s) | 2000±100 | 5000±250 | 10000±500 | 20000±1000 | 60000±3000 | 100000±5000 | X[a] |
| Vinyl Content, mol% | 0.62±0.03 | 0.43±0.03 | 0.35±0.03 | 0.27±0.03 | 0.22±0.03 | 0.16±0.03 | / |
| Volatile (150 °C, 3 h)/% | ≤1.00 | | | | | | |

Vinyl silicone oil of various viscosity can be customized.

# VINYL SILICONE FLUID (DIVINYL-TERMINATED) LF-VPDMS (CONTINUED)

## Applications:

**1. Addition-Cure LSR and HTV Silicone Rubber.** Used as primary base polymer in Pt-catalyzed LSR and HTV elastomer formulations. Terminal vinyl groups react with Si–H crosslinker under Pt catalysis; vinyl content (mol%) and crosslinker Si–H to vinyl stoichiometric ratio determine crosslink density, hardness, elongation, and tear strength of the cured elastomer. Recommended grades: LF-VPDMS-500 to LF-VPDMS-10000 for standard LSR; LF-VPDMS-10000 to LF-VPDMS-100000 for HTV.

**2. Electronic Potting, Encapsulation, and LED Encapsulants.** Used as base resin in two-part addition-cure potting compounds, thermal conductive adhesives, and LED encapsulants. Addition cure produces no volatile by-products and very low shrinkage, reducing void formation and mechanical stress on sensitive components during cure. Deep-section cure proceeds without moisture dependency. Recommended grades: LF-VPDMS-500 to LF-VPDMS-5000 depending on target compound viscosity.

**3. Silicone Release Coatings.** Used as film-forming base polymer in solvent-free addition-cure release liner coatings for paper and film substrates. Low-viscosity grades enable thin, uniform coating at high line speeds. Recommended grades: LF-VPDMS-100 to LF-VPDMS-500.

**4. Hybrid Copolymer Synthesis and Organic Resin Modification.** Used as vinyl-functional silicone block for copolymerization with polyurethane, acrylic, and other organic polymer systems via hydrosilylation or free-radical mechanisms, imparting weatherability, UV resistance, and flexibility to the organic matrix. At loading levels of 5–10%, used as reactive toughening additive in epoxy and acrylic resin systems.

## Formulation Notes:

When used as base polymer, LF-VPDMS typically constitutes 50–100% of the resin matrix.
When used as reactive modifier or toughening additive, typical loading is 5–10%.
Calculate Si–H crosslinker addition based on vinyl content (mol%) of the specific grade and target Si–H to vinyl molar ratio (typically 1.0–2.0:1 depending on required cure profile and mechanical properties).

## Package & Storage:

In 200 kg drum and 950 kg, 1000 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 36 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.

# ELECTRONIC-GRADE VINYL-TERMINATED POLYDIMETHYLSILOXANE LF-VPDMS E-GRADE

## Description:

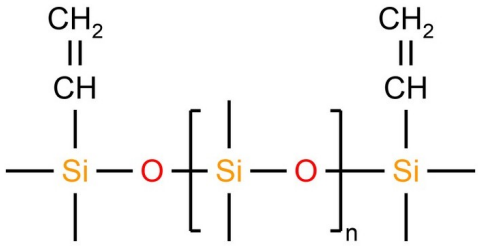
Silfluo LF-VPDMS E-Grade is an electronic-grade vinyl-terminated polydimethylsiloxane (CAS 68083-19-2) produced through a controlled purification process that reduces alkali metal ions ($K^+$, $Na^+$), trimethylamine, residual hydroxyl groups, and cyclic siloxanes (D3–D10) to levels required for semiconductor, optical, and avionics applications.

# ELECTRONIC-GRADE VINYL-TERMINATED POLYDIMETHYLSILOXANE LF-VPDMS E-GRADE (CONTINUED)

The viscosity grades and vinyl content specifications are identical to standard LF-VPDMS; the E-Grade designation refers exclusively to the purity tier — cyclic siloxane content, ionic contamination, and hydroxyl value — rather than to changes in molecular structure or end-group chemistry.

Three purity tiers are available: Standard E-Grade (D3–D10 < 500 ppm), Premium E-Grade (D3–D10 < 300 ppm), and Semiconductor E-Grade (D3–D10 < 100 ppm); tier selection depends on the sensitivity of the target application to silicone vapor deposition and ionic contamination.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-VPDMS E-grade |
| Chemical Name / Synonyms | Electronic-Grade Vinyl-Terminated Polydimethylsiloxane E-Grade Vi-PDMS; High-Purity Vinyl Silicone Fluid |
| CAS No. | 68083-19-2 |
| Molecular Formula | $CH_2$=CH-Si($CH_3$)$_2$-O-[Si($CH_3$)$_2$O]$_n$-Si($CH_3$)$_2$-CH=$CH_2$ |
| Appearance | Colorless, clear, and odorless liquid |

| Item | LF-VPDMS-100 | LF-VPDMS-200 | LF-VPDMS-245 | LF-VPDMS-300 | LF-VPDMS-350 | LF-VPDMS-500 | LF-VPDMS-1000 |
|---|---|---|---|---|---|---|---|
| Viscosity (25 °C, mPa·s) | 100±5 | 200±10 | 245±15 | 300±15 | 350±20 | 500±25 | 1000±50 |
| Vinyl Content, mol% | 2.86±0.03 | 1.89±0.03 | 1.70±0.03 | 1.54±0.03 | 1.51±0.03 | 1.16±0.05 | 0.86±0.05 |
| Volatile (150 °C, 3 h)/% | ≤1.00 | | | | | | |
| Item | LF-VPDMS-2000 | LF-VPDMS-5000 | LF-VPDMS-10000 | LF-VPDMS-20000 | LF-VPDMS-60000 | LF-VPDMS-100000 | LF-VPDMS-X |
| Viscosity (25 °C, mPa·s) | 2000±100 | 5000±250 | 10000±500 | 20000±1000 | 60000±3000 | 100000±5000 | X[a] |
| Vinyl Content, mol% | 0.62±0.03 | 0.43±0.03 | 0.35±0.03 | 0.27±0.03 | 0.22±0.03 | 0.16±0.03 | / |
| Volatile (150 °C, 3 h)/% | ≤1.00 | | | | | | |

Note: As viscosity increases, the terminal vinyl mol% proportionally decreases. Volatility for all E-grades is strictly ≤1.00% at 150 °C for 3 h.

## Ultra-High Purity Specifications (Cyclic Siloxane Control):

For electronic and optical applications, the E-Grade series can be customized into the following purity tiers:

Standard E-Grade: Low cyclic siloxanes (D3-D10) < 500 ppm

Premium E-Grade: Ultra-low cyclic siloxanes (D3-D10) < 300 ppm

Semiconductor E-Grade: Extreme-low cyclic siloxanes (D3-D10) < 100 ppm

# ELECTRONIC-GRADE VINYL-TERMINATED POLYDIMETHYLSILOXANE LF-VPDMS E-GRADE (CONTINUED)

## Features:

- Three purity tiers (D3–D10 < 500 / 300 / 100 ppm) selectable by application sensitivity
- Alkali metal ions ($K^+$, $Na^+$), trimethylamine, and residual hydroxyl groups reduced to electronic-grade levels
- Full viscosity range 100–100,000 mPa·s with identical grade structure to standard LF-VPDMS — E-Grade is a drop-in purity upgrade, not a formulation change
- Custom viscosity grades available on request

## Applications:

**1. Semiconductor Packaging.** Used as base polymer in Pt-catalyzed die-attach adhesives, stress-buffering interlayers, and glob-top encapsulants for bare silicon wafers and ICs. Semiconductor E-Grade (D3–D10 < 100 ppm) is required to prevent cyclic siloxane contamination of bond pads and adjacent die surfaces during cure and thermal cycling. Low $K^+$/$Na^+$ ionic content prevents ionic migration under device operating voltages. Confirm ionic purity ($Na^+$, $K^+$ < target ppm) and D3–D10 content via certificate of analysis for each production lot before use in qualified processes.

**2. Optical Fiber Coatings.** Used as the transparent matrix in protective cladding compounds for optical fibers. Low cyclic siloxane content (Premium or Semiconductor E-Grade) prevents vapor deposition on fiber surfaces and adjacent optical components during cure and service. Low hydroxyl value reduces absorption at near-IR wavelengths relevant to fiber optic transmission bands (1,310 nm and 1,550 nm). Verify optical transmission and refractive index of cured coating at target wavelengths.

**3. Avionics and Aerospace Conformal Coatings and Potting.** Used as base resin in conformal coatings and potting compounds for flight-critical avionics where low outgassing under thermal cycling (−55 °C to +125 °C, per MIL-STD-810 or equivalent) is specified. Premium E-Grade (D3–D10 < 300 ppm) reduces outgassing mass loss below thresholds required by NASA ASTM E595 or equivalent outgassing standards. Confirm total mass loss (TML) and collected volatile condensable material (CVCM) on the complete formulation, not the base polymer alone.

**4. LED Encapsulation.** Used as base polymer in addition-cure LED encapsulant formulations where thermal outgassing during soldering reflow or long-term operation at elevated junction temperatures causes optical clarity loss or brightness degradation. Standard or Premium E-Grade sufficient for most LED applications; Semiconductor E-Grade applicable where chip surface contamination risk from cyclic siloxanes is specified by LED package qualification requirements.

## Package & Storage:

In 200 kg drum and 950 kg, 1000 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 36 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.

# MONO-VINYL TERMINATED SILICONE FLUID LF-VMPDMS

## Description:

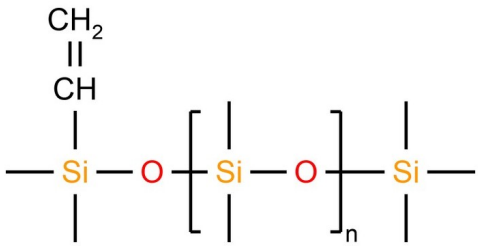
Silfluo LF-VMPDMS is a series of mono-vinyl terminated polydimethylsiloxane polymers with a single reactive vinyl group on one chain end and an inert trimethylsilyl group on the other, available in four viscosity grades (100, 350, 2,000, and 20,000 mPa·s) with custom viscosity and vinyl content available on request.

# MONO-VINYL TERMINATED SILICONE FLUID LF-VMPDMS (CONTINUED)

The mono-functional architecture is the defining structural distinction from di-vinyl terminated LF-VPDMS: when crosslinked into a Pt-catalyzed addition-cure network via hydrosilylation of the single terminal vinyl group, the opposite inert chain end is not incorporated into the network, forming a covalently anchored "dangling chain" — a pendant PDMS segment that reduces crosslink density, lowers cured elastomer hardness, and eliminates the oil bleed associated with non-reactive PDMS diluents.

Vinyl content (mol%) decreases with increasing viscosity, as the single terminal vinyl group represents a progressively smaller proportion of the longer chain; this relationship determines the stoichiometric contribution of LF-VMPDMS to the total Si–H to vinyl balance in the formulation.

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-VMPDMS-100 | LF-VMPDMS-350 | LF-VMPDMS-2000 | LF-VMPDMS-20000 |
|---|---|---|---|---|
| Chemical Name / Synonyms | Mono-Vinyl Terminated Polydimethylsiloxane Mono-Vinyl Silicone Oil; Mono-Vinyl Silicone Fluid; Monovinyl-Terminated PDMS; Single-End Vinyl Silicone Oil; Polydimethylsiloxane, Mono (vinyl group)-Terminated | | | |
| CAS No. | 68952-00-1 | | | |
| Viscosity (25 °C, mPa·s) | 100±5 | 350±10 | 2000±100 | 20000±1000 |
| Vinyl Content, mol% | 0.52±0.06 | 0.3±0.05 | 0.12±0.03 | 0.05±0.02 |
| Volatile (150 °C, 3 h)/% | ≤1.00 | | | |

Note: Custom viscosities and vinyl contents can be tailored to meet specific customer requirements.

## Features:

- Mono-functional reactive architecture — one vinyl end reacts into the network; one inert end forms a covalently anchored dangling chain
- Reduces cured elastomer Shore hardness without oil bleed — distinguishes LF-VMPDMS from non-reactive PDMS diluents (LF-PDMS)
- Four viscosity grades (100–20,000 mPa·s) covering short to long dangling chain lengths for tunable hardness reduction
- Custom viscosity and vinyl content available on request

# MONO-VINYL TERMINATED SILICONE FLUID LF-VMPDMS (CONTINUED)

## Applications:

**1. Thermal Interface Materials (TIMs).** Used as reactive plasticizer in Pt-catalyzed addition-cure thermal gels, thermal pads, and phase-change thermal interface materials. Dangling chains from LF-VMPDMS reduce crosslink density and cured Shore hardness, producing the low modulus and high conformability required for thermal contact between heat-generating components and heat sinks. Covalent anchoring into the network eliminates oil bleed for long-term reliability in electronics thermal management. Typical loading: optimize by hardness target (Shore OO 0–30 for gels); verify oil bleed resistance via ASTM D6386 or equivalent thermal aging test.

**2. Skin-Safe and Medical Silicones.** Used in life-casting, prosthetic, and body-safe addition-cure silicone formulations where Shore hardness <10 Shore A and dry, non-tacky surface feel are required. Covalent anchoring prevents migration of uncrosslinked polymer to the surface, which causes the oily surface texture associated with over-plasticized PDMS systems. Confirm biocompatibility of the complete formulation (base polymer, crosslinker, catalyst, filler) via ISO 10993 testing for intended skin-contact or implant-adjacent use.

**3. Electronic Encapsulation and Dielectric Gels.** Used in low-stress potting compounds and silicone dielectric gels for sensitive microelectronics where thermal expansion mismatch between the encapsulant and substrate generates mechanical stress on wire bonds and solder joints during thermal cycling. LF-VMPDMS reduces modulus of the cured gel, lowering stress transmission to bonded components. Verify dielectric constant, dissipation factor, and volume resistivity of the cured compound against circuit requirements.

**4. Mold-Making Rubber.** Used as reactive softener in addition-cure LSR and RTV-2 mold-making silicone formulations where reduced Shore hardness (typically Shore A 5–20) and no surface oil bleed are required for clean part release and mold longevity. Adjust loading level to achieve target hardness; recalculate Si–H to total vinyl ratio after incorporating LF-VMPDMS vinyl content contribution.

## Package & Storage:

Available in 25 kg plastic drums and 200 kg iron drums.
Keep strictly away from strong oxidizing agents, corrosive materials, strong acids, and alkalis.
Store in a cool, dry, dark, and well-ventilated environment in tightly sealed original containers. Keep away from direct sunlight, heat sources, and open flames. Classified and transported as non-hazardous chemicals.
Shelf Life: 12 months from the date of manufacture when stored under the recommended conditions.

## SILANOL (HYDROXYL) SILICONE FLUIDS

# LOW-MEDIUM VISCOSITY SILANOL-TERMINATED PDMS LF-OHP-L

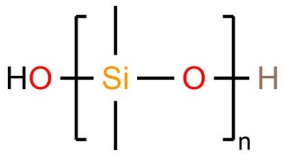
## Description:

Silfluo LF-OHP-L is a low- to medium-viscosity grade series of hydroxyl-terminated (silanol-terminated) polydimethylsiloxane, CAS 70131-67-8, commonly known as 107 silicone base or OH polymer, with viscosities typically from several tens to several tens of thousands of mm²/s (cSt).

It is a high-purity, linear polydimethylsiloxane with reactive silanol groups at both chain ends and is the fundamental base polymer for condensation-cure room temperature vulcanizing (RTV) silicone rubbers.

When combined with suitable crosslinking agents and catalysts at room temperature, it cures to form a durable silicone elastomer. The fluid is colorless and transparent and shows good storage stability.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-OHP-L |
| Chemical Name / Synonyms | Hydroxyl-terminated polydimethylsiloxane Silanol-terminated polydimethylsiloxane; α,ω-Dihydroxy polydimethylsiloxane; Poly(dimethylsiloxane), hydroxy terminated; 107 silicone base; OH polymer |
| CAS No. | 70131-67-8 |
| Molecular Formula | $HO[(CH_3)_2SiO]_nH$ |
| Appearance | Colorless, transparent, viscous fluid |
| Viscosity (25 °C) | Several tens to several tens of thousands mm²/s (cSt), grade-dependent |
| Relative Density (water = 1) | 0.97 |
| Other Specifications | According to contract; can be customized to customer requirements |

## Applications:

**1. Construction and building materials.** Base polymer for structural glazing sealants, weatherproofing caulks and joint sealants.

**2. Electronics and semiconductors.** Formulated into potting compounds, encapsulants and conformal coatings that protect sensitive components.

**3. Automotive and mechanical engineering.** Used to manufacture formed-in-place (FIP) gaskets, industrial sealants and vibration-damping materials.

**4. Textiles and plastics.** Used in fabric coatings for waterproofing and heat resistance, and as a reactive modifier in plastic formulations.

**5. Mold making.** Base material for RTV-2 silicone mold rubbers used in printing, rapid prototyping and industrial replication.

# LOW-MEDIUM VISCOSITY SILANOL-TERMINATED PDMS LF-OHP-L (CONTINUED)

## Packing:

In 190 kg drum and 950 kg IBC.

## Safety and Storage:

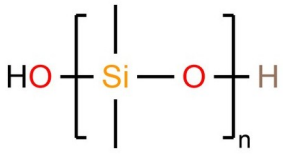
Keep away from heat and open flame.
When stored at or below 35 °C in the original unopened containers, this product has a usable life of 24 months from the date of production.

# HIGH VISCOSITY SILANOL-TERMINATED PDMS LF-OHP-H

## Description:

Silfluo LF-OHP-H is a high-viscosity grade series of hydroxyl-terminated polydimethylsiloxane (siloxanes and silicones, dimethyl, hydroxy-terminated), CAS 63148-60-7, commonly known as 107 silicone rubber or OH polymer. It is a high-purity, linear polydimethylsiloxane with reactive silanol groups at both chain ends and is the fundamental base polymer for condensation-cure room temperature vulcanizing (RTV) silicone rubbers.
When combined with suitable crosslinking agents and catalysts at room temperature, it cures to form a durable silicone elastomer. The product is a colorless, transparent, highly viscous fluid with good storage stability.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-OHP-H |
| Chemical Name / Synonyms | Hydroxyl-terminated polydimethylsiloxane Siloxanes and silicones, dimethyl, hydroxy-terminated; Silanol-terminated polydimethylsiloxane; 107 silicone rubber; OH polymer |
| CAS No. | 63148-60-7 |
| Molecular Formula | $HO[(CH_3)_2SiO]_nH$ |
| Appearance | Colorless, transparent, highly viscous fluid |
| Viscosity (25 °C) | High viscosity, grade-dependent (please contact us for available grades) |
| Relative Density (water = 1) | 0.97 |
| Other Specifications | According to contract; can be customized to customer requirements |

## Applications:

**1. Construction and building materials.** Base polymer for structural glazing sealants, weatherproofing caulks and joint sealants.

## HIGH VISCOSITY SILANOL-TERMINATED PDMS LF-OHP-H (CONTINUED)

**2. Electronics and semiconductors.** Formulated into potting compounds, encapsulants and conformal coatings that protect sensitive components.
**3. Automotive and mechanical engineering.** Used to manufacture formed-in-place (FIP) gaskets, industrial sealants and vibration-damping materials.
**4. Textiles and plastics.** Used in fabric coatings for waterproofing and heat resistance, and as a reactive modifier in plastic formulations.
**5. Mold making.** Base material for RTV-2 silicone mold rubbers used in printing, rapid prototyping and industrial replication.

### Packing:

In 190 kg drum and 950 kg IBC.

### Safety and Storage:

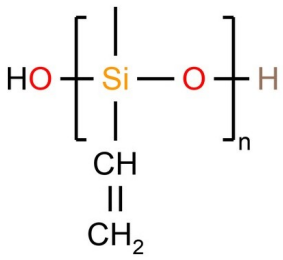
Keep away from heat and open flame.
When stored at or below 35 °C in the original unopened containers, this product has a usable life of 24 months from the date of production.

## VINYL HYDROXY SILICONE FLUID LF-OHPV

### Description:

Silfluo LF-OHPV is a vinyl-modified hydroxyl-terminated polysiloxane oligomer (CAS 67923-19-7), a bifunctional siloxane with silanol (Si–OH) end groups and pendant vinyl groups distributed along the backbone.
The two functional group types serve distinct roles in addition-cure silicone compounding: silanol groups interact with fumed silica surface silanols to reduce filler–polymer interaction, controlling compound viscosity and preventing crepe hardening during storage; vinyl groups participate in Pt-catalyzed hydrosilylation crosslinking, incorporating the fluid covalently into the elastomer network and preventing migration or bleed-out from the cured rubber.
Three grades — LF-OHPV-1, LF-OHPV-2.5, and LF-OHPV-10 — provide identical viscosity (35 mPa·s) and hydroxyl content (9.0 wt%) with increasing vinyl content (1.0, 2.5, and 11.5 wt%), allowing independent tuning of crosslink participation level without altering filler treatment performance.

### Chemical Structure:



# VINYL HYDROXY SILICONE FLUID LF-OHPV (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-OHPV-1 | LF-OHPV-2.5 | LF-OHPV-10 |
|---|---|---|---|
| Chemical Name / Synonyms | Vinyl-Modified Hydroxyl-Terminated Polysiloxane Vinyl Hydroxy Silicone Oil; Hydroxy-Terminated Vinyl Siloxane | | |
| CAS No. | 67923-19-7 | | |
| Molecular Formula | $HO-[Si(CH_3)(CH=CH_2)O]_n-H$ | | |
| Appearance | Colorless transparent liquid | | |
| Viscosity (25 °C, mPa·s) | 35 | 35 | 35 |
| Hydroxyl Content (wt%) | 9.0 | 9.0 | 9.0 |
| Vinyl Content (wt%) | 1.0 | 2.5 | 11.5 |

## Applications:

**1. Structure Control Agent — Anti-Crepe Hardening in LSR and HTV.** Used in LSR and HTV silicone rubber compounding to treat fumed silica in-situ during mixing. Silanol groups react with and cap fumed silica surface hydroxyls, reducing filler network formation, lowering compound viscosity, and preventing crepe hardening during uncured rubber storage. Vinyl groups ensure the agent is incorporated into the cured network rather than acting as a free fluid. Grade selection (vinyl content) determines the degree of network participation relative to plasticizing effect; optimize addition level and grade via compound trials for target compound viscosity, cured hardness, and mechanical properties.

**2. Non-Bleeding Reactive Plasticizer.** Used as reactive plasticizer in addition-cure LSR formulations where permanent reduction of compound hardness, improvement of elongation at break, and tear strength are required without surface bleed or oil exudation in the cured part. Vinyl groups crosslink into the Pt-catalyzed network during cure, permanently anchoring the plasticizing siloxane segments. Ensure sufficient Si–H crosslinker (LF-H101H, LF-H101L, or LF-H101TS) is present to react with added vinyl content from LF-OHPV when calculating Si–H to vinyl stoichiometry.

**3. Filler Surface Treatment for Addition-Cure Systems.** Used as surface treatment agent for inorganic fillers and pigments incorporated into Pt-catalyzed addition-cure systems. Silanol groups anchor to filler surfaces; vinyl groups ensure compatibility with the addition-cure matrix without contributing Pt catalyst-inhibiting species. Verify absence of inhibitory contaminants in the filler before use.

**4. Adhesion Promoter and Coupling Agent Intermediate.** Used as bifunctional reactive building block for synthesizing silicone-based adhesion promoters and specialty coupling agents requiring both silanol anchoring and vinyl reactivity in the same molecule.

| Grade | Vinyl Content | Recommended Use |
|---|---|---|
| LF-OHPV-1 | 1.0 wt% | Filler structure control primary; low crosslink network contribution |
| LF-OHPV-2.5 | 2.5 wt% | Balanced structure control and network participation; general LSR compounding |
| LF-OHPV-10 | 11.5 wt% | High vinyl crosslink participation; reactive plasticizer with significant network contribution; specialty addition-cure systems |

## Package & Storage:

In 200 kg/drum; 1000 kg/IBC.

## VINYL HYDROXY SILICONE FLUID LF-OHPV (CONTINUED)

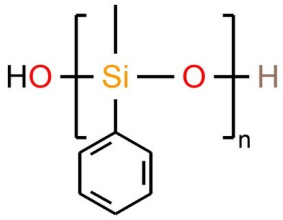
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. It is shipped as non-hazardous substance.
Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

## PHENYL METHYL HYDROXY SILICONE FLUID LF-OHPM

### Description:

Silfluo LF-OHPM is a silanol-terminated polymethylphenylsiloxane (CAS 80801-30-5) with methylphenylsiloxane repeat units and reactive Si–OH end groups on both chain termini.
The mixed methyl-phenyl substitution on silicon places LF-OHPM between standard PDMS (LF-OHP, methyl only) and fully diphenyl-substituted LF-OHP2 in terms of refractive index (1.430–1.500), thermal stability, and low-temperature flexibility — the methyl groups retain chain flexibility that the all-phenyl LF-OHP2 sacrifices, while the phenyl groups raise RI, thermal stability, and radiation resistance above standard PDMS.
Viscosity range (500–20,000 mPa·s) spans medium to high molecular weight, allowing selection based on required compound processing viscosity and target cured elastomer mechanical properties.

### Chemical Structure:




### Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-OHPM |
| Chemical Name / Synonyms | Silanol-Terminated Polymethylphenylsiloxane Phenyl Methyl Hydroxy Silicone Oil; Hydroxy-Terminated Phenylmethyl Siloxane |
| CAS No. | 80801-30-5 |
| Molecular Formula | $HO\text{-}[Si(CH_3)(C_6H_5)O]_n\text{-}H$ |
| Appearance | Clear to yellowish transparent viscous liquid |
| Viscosity (25 °C, mPa·s) | 500-20000 |
| Density (25 °C, g/cm³) | 0.98 |
| Refractive Index (25 °C, nD25) | 1.430 ~ 1.500 |

### Applications:

LF-OHPM is used in the following applications:
**1. Optical & LED Encapsulation.** Serves as a critical high-index reactive base for formulating optical-grade silicone encapsulants. The increased refractive index closely matches LED chips and optical lenses, enhancing light extraction efficiency while preventing thermal and UV-induced yellowing.

# PHENYL METHYL HYDROXY SILICONE FLUID LF-OHPM (CONTINUED)

**2. High-Temperature Resin Modifier.** Acts as a modifier for standard silicone resins, epoxies, and polyimides. It crosslinks into the polymer matrix to improve high-temperature flexibility, ablation resistance, and overall thermal shock performance.

**3. Extreme-Environment RTV Sealants.** Utilized as the primary base polymer for specialty Room Temperature Vulcanizing (RTV) sealants that must maintain elasticity and structural integrity in extreme thermal or high-radiation environments (e.g., aerospace, nuclear, and automotive exhaust sensors).

**4. Specialty Coatings & Damping Fluids.** Employed as a intermediate to synthesize advanced, weather-resistant industrial coatings and extreme-duty damping/lubricating compounds.

## Package & Storage:

In 200 kg/drum; 1000 kg/IBC.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 months from the date of production. It is shipped as non-hazardous substance.

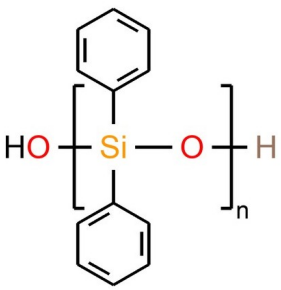
Storage beyond the shelf life does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

# DIPHENYL HYDROXY SILICONE FLUID LF-OHP2

## Description:

The Silfluo LF-OHP2 is a specialty, silanol-terminated diphenyl siloxane polymer. By integrating a high concentration of bulky diphenyl groups into the siloxane backbone, this fluid extends the performance range of RTV base polymers. It boasts a high refractive index (RI), thermal and oxidative stability, and resistance to high-energy radiation. Terminated with reactive hydroxyl (silanol) groups, it functions as a base polymer and crosslinking intermediate. It is highly sought after for formulating optical-grade LED encapsulants and extreme-environment sealants that demand optical clarity and structural integrity under severe duress.

## Chemical Structure:



# DIPHENYL HYDROXY SILICONE FLUID LF-OHP2 (CONTINUED)

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-OHP2 |
| Chemical Name / Synonyms | Silanol-Terminated Diphenylsiloxane Diphenyl Hydroxy Silicone Oil; Hydroxy-Terminated Diphenyl Siloxane |
| CAS No. | 63148-59-4 |
| Molecular Formula | $HO-[Si(C_6H_5)_2O]_n-H$ |
| Appearance | Clear to yellowish transparent highly viscous liquid |
| Viscosity (25 °C, mPa·s) | ≥1000 |
| Density (25 °C, g/cm³) | 0.98 |
| Refractive Index (25 °C, nD25) | 1.50~1.54 |

## Applications:

**1. Optical and LED Encapsulants.** Used as high refractive index base polymer in optical-grade silicone encapsulants and lens coatings for LED packages. Refractive index of 1.50–1.54 reduces the RI mismatch between the encapsulant and the LED chip surface, improving light extraction efficiency. Phenyl groups provide resistance to UV- and thermally-induced yellowing under prolonged LED operating conditions. Formulate with compatible high-RI crosslinker and catalyst; verify optical transmission, RI matching, and yellowing resistance via cured sample testing against LED package specifications.

**2. Extreme-Temperature Sealants and Adhesives.** Used as base polymer in RTV sealants and protective coatings for applications requiring continuous service at temperatures where standard PDMS-based RTV systems undergo thermal degradation or embrittlement. Phenyl substituents raise the onset of thermal oxidative degradation relative to methylsiloxane backbones. Select crosslinker type (alkoxy or oxime) based on substrate compatibility and required by-product profile.

**3. Radiation-Resistant Potting Compounds.** Used in potting compounds for electronic assemblies in aerospace and nuclear environments where exposure to gamma or high-energy radiation is expected. Phenyl groups in the siloxane backbone absorb and dissipate radiation energy, slowing chain scission and network degradation relative to PDMS-based systems. Verify radiation dose tolerance via testing against specific application dose rate and cumulative dose requirements.

**4. Block Copolymer Synthesis.** Used as silanol-functional diphenylsiloxane block for synthesizing silicone-polyimide, silicone-polycarbonate, and other silicone-organic block copolymers requiring high-temperature flexibility, high RI, and flame retardancy contributions from the silicone segment.

## Package & Storage:

In 200 kg/drum; 1000 kg/IBC.

Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 24 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.

# MONOHYDROXYL-TERMINATED SILICONE FLUID LF-MOHP

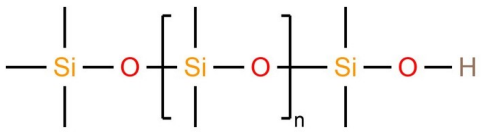
## Description:

Silfluo LF-MOHP is a monohydroxyl-terminated dimethyl silicone fluid. Its controlled molecular structure and single terminal hydroxyl group support surface-smoothing and structure-control performance.

It is a colorless, odorless, clear transparent liquid. It is soluble in organic solvents and compatible with various silicone fluids and silicone rubber.

Different molecular-weight grades can be selected for different application requirements.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-MOHP |
| Appearance | Colorless, odorless, clear transparent liquid |
| Viscosity (25 °C) | 100-1000 (±5%) |
| Volatile Content (150 °C, 3 h), % | ≤ 1 |

* Other viscosities can be customized according to customer requirements.

## Applications:

**1. Modification of Vinyl Polymers.** Silfluo LF-MOHP can crosslink with the base polymer. Its controlled structure and terminal functionality help improve surface smoothness, compound structure control, water resistance, and anti-blocking performance. It can also improve leveling, surface gloss and slip, and adjust hand feel and softness, while helping reduce oil bleed and surface tack.

## Package & Storage:

Available in 200 kg steel drums or 950 kg IBC totes.

Transport as a non-hazardous chemical. Protect from rain and direct sunlight.

When stored under the recommended conditions, the product retains its original properties for 12 months.

## HYDROGEN SILICONE FLUIDS

# HIGH HYDROGEN SILICONE FLUID LF-H101H

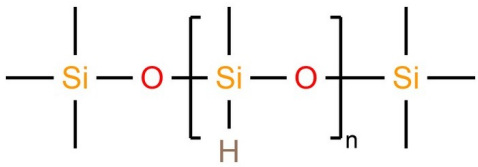
## Description:

Silfluo LF-H101H is 100% active polymethylhydrogensiloxane (PMHS, CAS 63148-57-2), a linear polysiloxane with reactive Si–H groups distributed along the backbone at hydrogen content ≥1.5 wt%.

Under platinum catalysis, pendant Si–H groups undergo hydrosilylation with olefinic double bonds; under tin or acid catalysis, they undergo dehydrogenative condensation with hydroxyl-bearing substrates, releasing hydrogen gas. Both reaction pathways form covalent Si–C or Si–O–substrate bonds respectively.

The 100% active, solvent-free fluid is used as crosslinker in addition-cure silicone elastomers, as synthetic intermediate for modified silicone fluids, and as hydrophobing agent applied directly or via emulsion to inorganic and organic substrates.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-H101H |
| Chemical Name / Synonyms | Methyl Hydrogen silicone fluid Polymethylhydrogensiloxane (PMHS); Hydrogen Silicone Oil |
| CAS No. | 63148-57-2 |
| Appearance | Colorless transparent liquid |
| Molecular Formula | $(CH_3)_3SiO[(CH_3)HSiO]_nSi(CH_3)_3$ |
| Refractive Index (25 °C, nD25) | 1.3900 ~ 1.4000 |
| Viscosity (25 °C, mPa·s) | 15-50 |
| Hydrogen Content, wt% | ≥1.5% |
| Density (25 °C) | 0.98-1.02 |
| Volatiles (%) | ≤1 |
| pH Value | 6.0-7.0 |

Various viscosity and hydrogen can be customized.

## Applications:

**1. Addition-Cure Crosslinker for LSR and Silicone Elastomers.** Used as the primary crosslinking agent in platinum-catalyzed addition-cure liquid silicone rubber (LSR) and silicone elastomer systems. Pendant Si–H groups react with vinyl-terminated PDMS under Pt catalysis to form a 3D siloxane crosslinked network. Crosslink density and mechanical properties are controlled by the Si–H to vinyl ratio and PMHS molecular weight. Inhibitor sensitivity and pot life must be managed; avoid contact with Pt catalyst inhibitors (sulfur, phosphorus, tin compounds, amines).

# HIGH HYDROGEN SILICONE FLUID LF-H101H (CONTINUED)

**2. Synthetic Intermediate for Modified Silicone Fluids.** Used as the Si–H reactive backbone for synthesizing polyether-modified silicones (silicone surfactants), long-chain alkyl-modified silicones (e.g., LF-AM11), epoxy-modified silicones, and other functional silicone fluids via platinum-catalyzed hydrosilylation with the corresponding allyl- or vinyl-functional organic reagent.

**3. Hydrophobing Agent for Inorganic and Construction Substrates.** Applied neat or in dilute solution to glass, ceramics, leather, paper, metals, cement, concrete, and natural stone. Dehydrogenative condensation with surface hydroxyl groups under acid or metal salt catalysis deposits a covalently bonded hydrophobic siloxane film. Apply by spray, brush, or immersion; cure conditions (catalyst type, temperature, time) should be optimized for substrate and required durability. Note: hydrogen gas is released during condensation with hydroxyl surfaces — ensure adequate ventilation.

**4. Dry Powder Anti-Caking Treatment.** Used as moisture-proof, anti-caking surface coating for dry chemical fire extinguishing powders. PMHS treatment reduces powder surface energy and prevents moisture absorption, maintaining long-term flowability and discharge performance.

**5. Textile and Fiber Finishing.** Formulated into aqueous emulsion and applied to cotton, linen, silk, acrylic, and polyester fabrics by padding or exhaust process. Co-cured with hydroxyl silicone emulsion under heat and catalyst to form durable water-repellent (DWR) and softening finish on fiber surfaces.

**6. Color Cosmetics and Oily Foundations.** Used as hydrophobic agent, internal lubricant, and anti-sticking additive in oily foundations and color cosmetic formulations, improving water resistance, skin slip, and pigment dispersion stability.

| 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 50 kg, 200 kg drum and 1000 kg 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.

# LOW HYDROGEN SILICONE FLUID LF-H101L

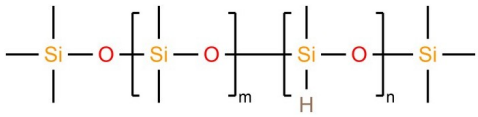
## Description:

Silfluo LF-H101L is a methylhydrogen-dimethylsiloxane copolymer (CAS 68037-59-2), a partially hydrogenated silicone fluid in which Si–H-bearing methylhydrogensiloxane units are interspersed with non-reactive dimethylsiloxane units along the backbone.

The dimethylsiloxane co-units dilute Si–H site density relative to LF-H101H (high-hydrogen PMHS), providing controlled, lower crosslink density upon cure — producing softer, more flexible elastomeric networks and reducing steric hindrance during hydrosilylation grafting of bulky organic side chains.

Viscosity (10–1,000 mPa·s) and hydrogen content (0.1–1.5 wt%) are independently customizable, allowing precise tuning of crosslink density, cure kinetics, and chain flexibility for specific formulation requirements.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-H101L |
| Chemical Name / Synonyms | Methyl Hydrogen Silicone Fluid (Copolymer) Methylhydrogen-Dimethylsiloxane Copolymer; Low-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 (can be customized) |
| Hydrogen Content, wt% | 0.1 ~ 1.5 (can be customized) |
| Density (25 °C) | 0.98-1.00 |
| Volatiles (%) | ≤1 |
| pH Value | 6.0-7.0 |

Various viscosity and hydrogen can be customized.

## Applications:

**1. Controlled Crosslinker for Soft LSR and Silicone Encapsulants.** Used as crosslinking agent in platinum-catalyzed addition-cure LSR and silicone encapsulant systems where reduced crosslink density is required to achieve higher elongation at break, lower hardness (Shore A), and improved tear strength compared to systems crosslinked with high-hydrogen PMHS. Si–H to vinyl ratio and hydrogen content selection determine the mechanical profile of the cured elastomer. Avoid contact with Pt catalyst inhibitors (sulfur, phosphorus, tin compounds, amines).

**2. Synthetic Intermediate for Modified Silicone Fluids.** Used as Si–H reactive backbone for synthesizing polyether-modified, epoxy-modified, and long-chain alkyl-modified silicone fluids via Pt-catalyzed hydrosilylation. Lower Si–H density reduces inter-site steric interference during grafting of bulky side chains (e.g., polyether or long alkyl groups), improving grafting efficiency and product uniformity relative to high-hydrogen PMHS.

# LOW HYDROGEN SILICONE FLUID LF-H101L (CONTINUED)

**3. Dry Powder Anti-Caking Treatment.** Used as moisture-proof, anti-caking surface coating for dry chemical fire extinguishing powders. Controlled Si–H content provides sufficient surface hydrophobing while the copolymer backbone imparts flexibility to the treated powder particle coating, maintaining flowability and discharge performance under long-term storage.

**4. Hydrophobing Agent for Construction and Industrial Substrates.** Applied neat or in dilute solution to glass, ceramics, cement, marble, metals, and leather. Dehydrogenative condensation with surface hydroxyl groups under acid or metal salt catalysis deposits a hydrophobic siloxane film. Lower crosslink density of LF-H101L-derived films provides a more flexible coating layer suited to substrates that undergo dimensional change or flex in service. Ensure adequate ventilation — hydrogen gas is released during condensation with hydroxyl surfaces.

| 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 50 kg, 200 kg drum and 1000 kg 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.

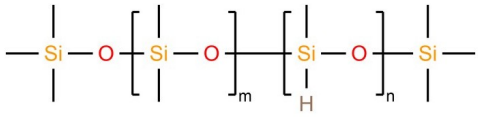
# SIDE-H SILICONE FLUID LF-H101S

## 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.

# SIDE-H SILICONE FLUID LF-H101S (CONTINUED)

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-H101S |
| Chemical Name / Synonyms | Methyl Terminated, Pendant Hydrogen Silicone Fluid 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 |

| 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 |

Various viscosity and hydrogen content can be customized.

## Applications:

**1. Comb-Type Modified Silicone Synthesis.** Used as backbone for Pt-catalyzed hydrosilylation grafting of allyl- or vinyl-functional organic side chains (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).

# SIDE-H SILICONE FLUID LF-H101S (CONTINUED)

**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:

In 50 kg, 200 kg drum and 1000 kg 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.

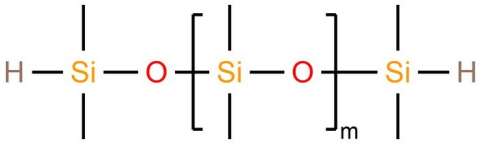
# TERMINAL-H (HYDRIDE-TERMINATED) SILICONE FLUID LF-H101T

## 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.

# TERMINAL-H (HYDRIDE-TERMINATED) SILICONE FLUID LF-H101T (CONTINUED)

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-H101T |
| Chemical Name / Synonyms | Hydride-Terminated Polydimethylsiloxane 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 |

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 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.

# TERMINAL-H (HYDRIDE-TERMINATED) SILICONE FLUID LF-H101T (CONTINUED)

| 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:

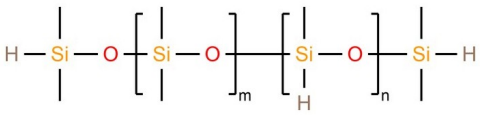
In 50 kg, 200 kg drum and 1000 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 12 months from the date of production. It is shipped as non-hazardous substance.
Storage beyond the shelf life does not necessarily mean 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.

# TERMINAL AND SIDE-H SILICONE FLUID LF-H101TS

## 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.

## Chemical Structure:



# TERMINAL AND SIDE-H SILICONE FLUID LF-H101TS (CONTINUED)

## Typical Technical Properties:

| Silfluo Code | LF-H101TS-5 | LF-H101TS-100 |
|---|---|---|
| Chemical Name / Synonyms | Hydride-Terminated Methylhydrosiloxane-Dimethylsiloxane Copolymer 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 |

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.

# TERMINAL AND SIDE-H SILICONE FLUID LF-H101TS (CONTINUED)

| 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 50 kg, 200 kg drum and 1000 kg 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.

# HYDROGEN SILICONE FLUIDS BY TERMINATION

The position of the Si–H groups decides how a hydrogen silicone fluid reacts: pendant Si–H groups crosslink, terminal Si–H groups extend the chain, and grades with both do both. High-hydrogen, low-hydrogen, pendant and hydride-terminated are overlapping names; the table lists the grades by termination type with Si–H content (active hydrogen), viscosity and volatile content.

| Termination | Code | Viscosity, 25 °C cSt | Si–H content % | Volatile content 150 °C / 3 h, % |
|---|---|---|---|---|
| Side-H (pendant) | LF-H101-H46 | 2~4 | 0.45~0.50 | — |
| | LF-H101-H65 | 10~15 | 0.50~0.70 | ≤10 (120 °C / 2 h) |
| | LF-H101-H12 | 10~20 | 0.11~0.13 | ≤8 |
| | LF-H101-H536 | 10~20 | 0.35~0.37 | ≤10 |
| | LF-H101-H510 | 10~20 | 0.95~1.05 | ≤5 |
| | LF-H101-H95 | 20~25 | 0.18~0.22 | ≤5 |
| | LF-H101-H57 | 30~40 | 0.13~0.14 | ≤5 |
| | LF-H101-H308 | 35~45 | 0.11~0.13 | ≤5 |
| | LF-H101-H512 | 55~65 | 1.15~1.25 | ≤1 |
| | LF-H101-H8 | 50~70 | 0.05~0.07 | ≤5 |
| | LF-H101-H503 | 50~70 | 0.53~0.57 | ≤1 |
| | LF-H101-H33 | 60~80 | 0.17~0.19 | ≤5 |
| | LF-H101-H36 | 60~100 | 0.35~0.40 | ≤1 |
| | LF-H101-H502 | 70~110 | 0.75~0.79 | ≤1 |
| | LF-H101-H23 | 80~100 | 0.40~0.44 | ≤2 |
| | LF-H101-H35 | 90~130 | 0.11~0.13 | ≤5 |
| | LF-H101-H86 | 80~100 | 0.08~0.1 | ≤2 |
| | LF-H101-H3 | 90~110 | 0.27~0.29 | ≤5 |
| | LF-H101-H138 | 90~130 | 0.170~0.190 | ≤11 (105 °C / 1 h) |
| | LF-H101-H802 | 100~120 | 0.77~0.88 | ≤1 |
| Hydride-terminated (both ends) | LF-H101-H900 | 5~10 | 0.20~0.22 | ≤30 (120 °C / 2 h) |
| | LF-H101-H518 | 8~12 | 0.17~0.19 | — |
| | LF-H101-H45 | 17~22 | 0.11~0.13 | ≤5 |
| | LF-H101-H6 | 20~25 | 0.1~0.12 | ≤5 |
| | LF-H101-DH07 | 30~50 | 0.06~0.08 | ≤1.5 |
| | LF-H101-DH04 | 60~70 | 0.04~0.05 | ≤5 |
| | LF-H101-DH58 | 50~60 | 0.050~0.055 | <1 (105 °C / 3 h) |
| | LF-H101-DH37 | 80~100 | 0.035~0.04 | ≤5 |
| | LF-H101-DH02 | 400~1000 | 0.01~0.015 | <5 |
| Pendant and hydride-terminated | LF-H101-LHC-2 | 70~90 | 0.77~0.81 | ≤1 |
| | LF-H101-LHC-3 | 30~40 | 0.78~0.82 | ≤2 |
| | LF-H101-LHC-7 | 30~40 | 0.22~0.28 | ≤3 |
| | LF-H101-LHC-16 | 40~55 | 0.12~0.14 | ≤1 |
| Mono-hydride-terminated | LF-H101-H222-6 | 2~4 | 0.18~0.22 | — |
| | LF-H101-H222-4 | 10~20 | 0.08~0.12 | <20 |
| | LF-H101-H222-5 | 20~30 | 0.03~0.07 | <10 |
| | LF-H101-H222 | 40~60 | 0.025~0.045 | <5 |
| | LF-H101-H222-10 | 60~80 | 0.02~0.035 | 1.50 |
| | LF-H101-H222-3 | 80~100 | 0.01~0.03 | <3 |

Si–H content = active hydrogen content. Volatile content at 150 °C / 3 h unless another condition is given; — = not specified. Other viscosities and Si–H contents on request.

## MODIFIED SILICONE FLUIDS

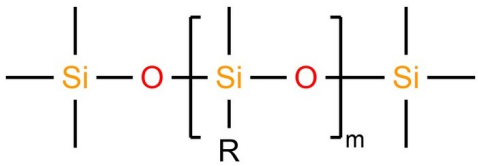
# ALKYL AND ALKYL ARYL SILICONE FLUIDS LF-AM11 / AM12

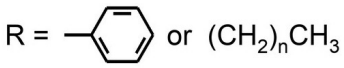
## Description:

Silfluo LF-AM11 and LF-AM12 are modified silicone fluids for mold release, lubrication and coating formulations. LF-AM11 is long-chain alkyl-modified; LF-AM12 is long-chain alkyl aryl-modified. Both provide lubricity, water repellency and paintability/printability.

Performance equivalent to Dow OFX-0203.

## Chemical Structure:




## Typical Technical Properties:

| Silfluo Code | LF-AM11 | LF-AM12 |
|---|---|---|
| Appearance | Colorless transparent liquid | |
| Modification | Long-chain alkyl | Long-chain alkyl aryl |
| Solids Content (%) | ≥99 | ≥99 |
| Kinematic Viscosity (25 °C, cSt) | 500–1500 | 1000–4000 |
| Specific Gravity (25 °C) | 0.880–0.910 | 0.910–0.940 |

## Applications:

**1. Mold release.** Used in release formulations for molded products, including parts that undergo painting or printing.

**2. Coating additives.** Used as silicone components to improve slip and water repellency in coatings.

**3. Lubricant formulations.** Used as lubricants or lubricant additives to provide silicone lubricity in industrial formulations.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

Shelf life: 24 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# EPOXY-MODIFIED SILICONE FLUID LF-EM102

## Description:

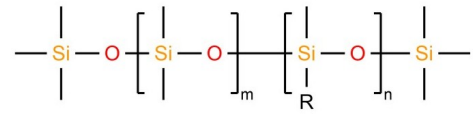
Silfluo LF-EM102 is a series of epoxy-modified silicone fluids available with pendant (EM102S) or terminal (EM102E) epoxy functionality. The epoxy groups provide reactive sites for incorporation into compatible organic resin systems. Depending on the epoxy structure and curing conditions, curing routes may include cationic polymerization or ring-opening reactions with suitable amine or anhydride curing agents.

The polysiloxane segments contribute surface wetting, slip and flexibility. The fluids have low surface tension and can improve surface smoothness when used as surface treatment agents. As internal additives, they may help reduce internal stress, brittleness and cracking.

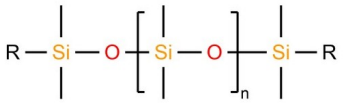
Typical applications include UV-curable coatings, adhesives, electronic potting compounds, textile treatments and composites. The fluids may also improve adhesion and weather resistance. Performance depends on the grade, formulation, compatibility and curing conditions.

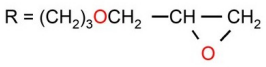
## Chemical Structure:

LF-EM102S (pendant epoxy)



LF-EM102E (terminal epoxy)





## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-EM102 |
| Appearance | Colorless to slightly yellow transparent liquid |
| Pendant Epoxy Grades — Dynamic Viscosity (25 °C, mPa·s) | 100–10000 |
| Terminal Epoxy Grades — Dynamic Viscosity (25 °C, mPa·s) | 50–1500 |
| Volatile Content (120 °C, 3 h, %) | ≤1 |

## Applications:

**1. Epoxy coatings and adhesives.** Used as a reactive modifier in epoxy formulations cured with amines or anhydrides, combining silicone surface properties with the organic resin network.

**2. Electronic potting and composites.** Used as a formulation component to modify flexibility, internal stress and interfacial wetting in potting and composite resin systems.

**3. Textile and surface treatment.** Used in treatment formulations to improve surface smoothness and lubricity.

# EPOXY-MODIFIED SILICONE FLUID LF-EM102 (CONTINUED)

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

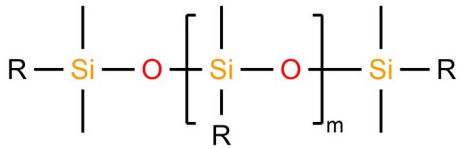
Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature. Transport as non-dangerous goods.

# POLYETHER-MODIFIED SILICONE FLUIDS LF-PE101 SERIES

## Description:

Silfluo LF-PE101-20 and LF-PE101-50 are polyether-modified silicone fluids for wetting, textile finishing and formulation processing. They provide low surface tension, softness and antistatic properties.

## Chemical Structure:




$R = CH_3$ or $(CH_2)_3O(C_2H_4O)_a(C_3H_6O)_bR'$

## Typical Technical Properties:

| Silfluo Code | LF-PE101-20 | LF-PE101-50 |
|---|---|---|
| Appearance | Colorless to pale yellow transparent liquid | |
| Kinematic Viscosity (25 °C, cSt) | 1200–1500 | 4500–6000 |
| Active Content (%) | 100 | 100 |
| Solubility | Soluble in water, alcohols and aromatic hydrocarbons | |

## Applications:

**1. Textile and film additives.** Used in textile softening treatments and as anti-drip additives in greenhouse films.
**2. Coatings and polyurethane formulations.** Used to improve leveling in coatings and polyurethane slurries, and as foam-control components in polyurethane foaming systems.
**3. Industrial formulation raw materials.** Used in cutting-fluid and cleaner formulations, and as raw materials for self-emulsifying and delayed-coking antifoams.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

# POLYETHER-MODIFIED SILICONE FLUIDS LF-PE101 SERIES (CONTINUED)

## Safety and Storage:

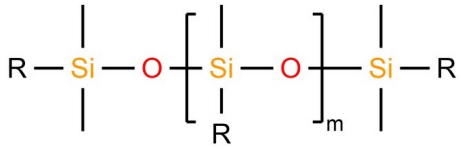
Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# SILICONE POLYETHER SURFACTANT FOR RIGID PU FOAM LF-PE102

## Description:

Silfluo LF-PE102 is a silicone polyether surfactant for rigid polyurethane foam, made from a Si–C-linked polyether-modified silicone fluid. Its non-hydrolyzable linkage and foam-stabilizing function support rigid-foam production.

## Chemical Structure:



$R = CH_3$ or $(CH_2)_3O(C_2H_4O)_a(C_3H_6O)_bR'$

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-PE102 |
| Appearance | Colorless to pale yellow transparent liquid |
| Kinematic Viscosity (25 °C, cSt) | 600–1000 |
| Active Content (%) | 100 |
| Solubility | Soluble in water, alcohols and aromatic hydrocarbons |

## Applications:

**1. Rigid polyurethane insulation.** Used as a foam stabilizer in rigid polyurethane formulations for thermal-insulation applications.
**2. Polyurethane packaging foam.** Used to stabilize rigid polyurethane foam during manufacture of packaging materials.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

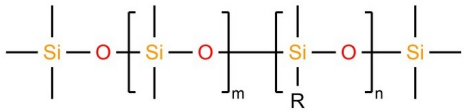
# ACRYLATE-MODIFIED SILICONE FLUIDS LF-ACM11 SERIES

## Description:

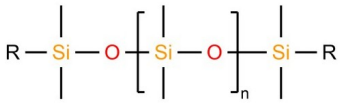
Silfluo LF-ACM11-600 and LF-ACM11-601 are reactive silicone fluids for radiation-curable coating and resin systems. LF-ACM11-600 is a polysiloxane with pendant acrylate groups. LF-ACM11-601 is an acrylate-terminated polydimethylsiloxane. Their acrylate groups allow the silicone segments to be incorporated into the cured resin network.

## Chemical Structure:

LF-ACM11-600 (pendant acrylate)



LF-ACM11-601 (acrylate-terminated)



$R = (CH_2)_3OCOCH{=}CH_2$

## Typical Technical Properties:

| Silfluo Code | LF-ACM11-600 | LF-ACM11-601 |
|---|---|---|
| Appearance | Yellow transparent liquid | Pale yellow viscous liquid |
| Molecular Weight (g/mol) | 2000–20000 | 100–50000 |

## Applications:

**1. LF-ACM11-600 — Radiation-curable coatings.** Used as a crosslinkable flow and surface additive in radiation-curable coatings to improve flow, scratch resistance and marker resistance. It promotes deaeration and reduces blocking, with modest improvements in surface slip and defoaming.

**2. LF-ACM11-601 — UV-curable resin modification.** Used as a reactive silicone component in UV-curable resin systems. Its terminal acrylate groups crosslink with the resin, introducing silicone segments into the coating network and surface to improve weather resistance, lasting surface feel, stain resistance and low-temperature performance.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

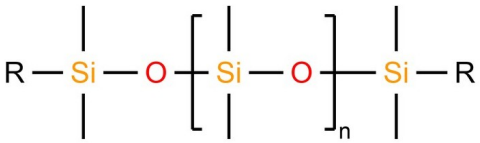
Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature. Transport as non-dangerous goods.

# HYDROXYL-TERMINATED POLYETHER-MODIFIED SILICONE FLUIDS LF-DPM12 SERIES

## Description:

Silfluo LF-DPM12 are hydroxyl-terminated polyether-modified silicone fluids for organic resin modification and coating flow. Their reactive hydroxyl groups allow silicone segments to be incorporated into suitable resin networks.

## Chemical Structure:



$R = (CH_2)_3O(C_2H_4O)_a(C_3H_6O)_bH$

## Typical Technical Properties:

| Silfluo Code | LF-DPM12 Series |
|---|---|
| Appearance | Colorless transparent liquid |
| Molecular Weight (g/mol) | 2000–2600 |

## Applications:

**1. Reactive resin modification.** Used in copolymerization and resin-modification formulations to introduce silicone softness, lubricity and hydrophobicity.

**2. Coating flow and surface properties.** Used as leveling components in organic resin coatings. Chemical incorporation of the silicone segments supports durable surface modification.

**3. Grade selection.** From LF-DPM12A to LF-DPM12F, compatibility with organic resins decreases, while softness and abrasion resistance after modification increase.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

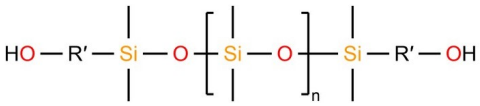
Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# HYDROXYALKYL-TERMINATED SILICONE FLUIDS LF-CM12 SERIES

## Description:

Silfluo LF-CM12 fluids are silicone diols with hydroxyalkyl functionality at both chain ends. The organic hydroxyl groups provide reactive sites for resin modification; they are distinct from silanol groups directly bonded to silicon. Performance equivalent to Shin-Etsu KF-6001 / KF-6002 and Evonik TEGO-5000 / TEGO-5001.

## Chemical Structure:




R′ = alkylene linker

## Typical Technical Properties:

| Silfluo Code | LF-CM12-1300 | LF-CM12-2000 | LF-CM12-4000 |
|---|---|---|---|
| Appearance | Colorless transparent liquid | | |
| Molecular Weight (g/mol) | 1300 | 2000 | 4000 |
| Hydroxyl Value (mg KOH/g) | 80 | 56 | 28 |
| Kinematic Viscosity (25 °C, cSt) | 37 | 58 | 105 |

## Applications:

**1. Polyurethane modification.** Used as reactive silicone diols in polyurethane formulations to introduce silicone segments through reaction with isocyanate groups.

**2. Polyester and coating resin modification.** Used in hydroxyl-reactive resin systems to improve processing flow and low-temperature flexibility.

**3. Easy-clean and anti-blocking coatings.** Used as reactive modifiers for coating formulations requiring stain resistance, anti-graffiti properties and reduced blocking.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature. Transport as non-dangerous goods.

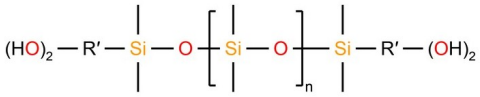
# TETRAHYDROXYALKYL-FUNCTIONAL SILICONE FLUID LF-CM14

## Description:

Silfluo LF-CM14 is a silicone fluid with tetrahydroxyalkyl functionality. Its organic hydroxyl groups allow incorporation into reactive organic resin networks for durable surface modification.

# TETRAHYDROXYALKYL-FUNCTIONAL SILICONE FLUID LF-CM14 (CONTINUED)

## Chemical Structure:



R′ = branched alkylene linker

## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-CM14 |
| Appearance | Colorless transparent liquid |
| Molecular Weight (g/mol) | 2000–2200 |
| Hydroxyl Value (mg KOH/g) | 112 |
| Kinematic Viscosity (25 °C, cSt) | 260 |

## Applications:

**1. Reactive resin modification.** Used as a multifunctional silicone component in hydroxyl-reactive organic resin formulations.

**2. Water-repellent and easy-clean coatings.** Used to modify resin surfaces for improved water repellency, stain resistance and cleanability.

## Packing:

25 kg or 200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 L IBCs.

## Safety and Storage:

Shelf life: 12 months from the date of manufacture in original unopened containers at room temperature. Transport as non-dangerous goods.

## SILICONE EMULSIONS

# METHYL HYDROGEN POLYSILOXANE EMULSION LF-EH101

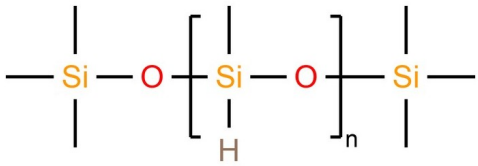
## Description:

Silfluo LF-EH101 is an aqueous emulsion of polymethylhydrogensiloxane (PHMS), a polysiloxane with reactive Si–H groups distributed along the backbone.

The Si–H groups undergo hydrolysis and condensation on contact with moisture or hydroxyl-bearing surfaces, or crosslink with hydroxyl-terminated silicone emulsions under acid or metal catalyst, forming a covalently anchored hydrophobic siloxane network on the treated substrate.

The emulsion form (30 ± 2% solids, pH 3–5) allows direct dilution and application from aqueous systems without organic solvent, suitable for textile, construction, and industrial surface treatment processes.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-EH101 |
| Chemical Name | Polymethylhydrogensiloxane Emulsion (PHMS Emulsion) |
| Appearance | Milky white liquid |
| Molecular Formula | $(CH_3)_3SiO[(CH_3)HSiO]_nSi(CH_3)_3$ |
| Solid Content (%) | 30±2 |
| pH Value | 3-5 |
| Centrifugal Stability (3000 (15 min)) | Stable (No separation) |

## Applications:

**1. Mold Release Agent.** Forms a thin, chemically inert release film on mold surfaces. Non-corrosive to tooling; provides multiple-release performance with low coating buildup. Apply as dilute aqueous solution or neat emulsion by spray or wipe onto mold surface; cure conditions (temperature, time) depend on substrate and required film durability. Verify compatibility with mold material and molded polymer system via trial before production use.

**2. Textile Waterproofing and Durable Water Repellency (DWR).** Applied to natural and synthetic fabrics by padding or exhaust process. When co-applied with hydroxyl-terminated silicone emulsion and cured under heat (typically 150–180 °C, 1–3 min), Si–H groups crosslink with Si–OH groups to form a covalently bonded hydrophobic siloxane network on the fiber surface, imparting durable water repellency and soft hand-feel. Optimize PHMS-to-hydroxyl silicone ratio, catalyst type (e.g., zinc or tin salt), concentration, and cure conditions for specific fiber and fabric construction.

## METHYL HYDROGEN POLYSILOXANE EMULSION LF-EH101 (CONTINUED)

**3. Hydrophobing Agent for Industrial and Construction Materials.** Applied as dilute aqueous treatment to leather, paper, glass, ceramics, metals, cement, concrete, and natural stone. Si–H groups react with surface hydroxyls and ambient moisture to form a water-repellent siloxane layer that reduces capillary moisture uptake while maintaining substrate vapor permeability. Application method (spray, brush, immersion), dilution level, and cure conditions should be optimized for the specific substrate porosity and service environment.

### Package & Storage:

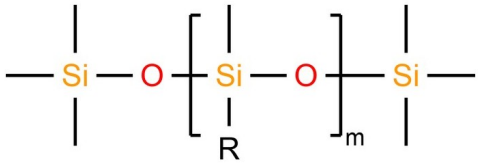
In 50 kg, 200 kg drum and 1000 kg IBC.
Keep in cool, dry and ventilated place. Keep away from sunlight and fire sources. Keep in unopened containers, shelf life is 12 months from the date of production. It is shipped as non-hazardous substance.
Storage beyond the shelf life does not necessarily mean 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.

## SILICONE EMULSION LF-SE201

### Description:

Silfluo LF-SE201 is a nonionic silicone emulsion for industrial release, lubrication and surface finishing. It features low surface tension, chemical stability, good slip and softness, along with outstanding smoothness and anti-sticking properties.
Performance equivalent to Dow MEM-0349.

### Chemical Structure:







### Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-SE201 |
| Appearance | Milky white liquid |
| Solids Content (%) | 30–60 |
| pH | 6–8 |
| Ionic Character | Nonionic |
| Centrifugal Stability (3000 rpm, 15 min) | No separation or floating oil |

# SILICONE EMULSION LF-SE201 (CONTINUED)

## Applications:

**1. Rubber, plastics and latex processing.** Used as a mold release and separating agent to support demolding and improve the surface finish of molded products.
**2. Textile and leather finishing.** Used to improve softness, hand feel, surface slip and gloss in textile and leather treatments.
**3. Industrial lubrication.** Used in lubricant formulations for chemical processing, coatings and building-material applications.

## Packing:

200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 kg IBCs.

## Safety and Storage:

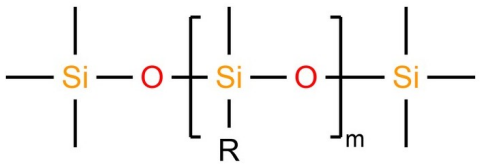
Shelf life: 6 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

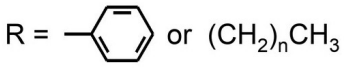
# LONG-CHAIN ALKYL (ARYL) SILICONE EMULSION LF-SE203

## Description:

Silfluo LF-SE203 is an emulsion of long-chain alkyl (aryl)-modified silicone. It combines lubrication and release properties with water repellency and paintability/printability.
Performance equivalent to Dow MEM-5009.

## Chemical Structure:




## Typical Technical Properties:

| | |
|---|---|
| Silfluo Code | LF-SE203 |
| Appearance | Milky white liquid |
| Active Content (%) | 30 or 60 |
| pH | 6–8 |
| Centrifugal Stability (3000 rpm, 15 min) | No separation or floating oil |

# LONG-CHAIN ALKYL (ARYL) SILICONE EMULSION LF-SE203 (CONTINUED)

## Applications:

**1. Mold release.** Used in release formulations for molded parts, including applications involving subsequent painting or printing.

**2. Coating additives.** Used to improve slip and water repellency in coating formulations.

**3. Lubrication.** Used as a lubricant or as a silicone component in lubricant formulations.

## Packing:

200 kg plastic drums, 200 kg plastic-lined steel drums, and 1000 kg IBCs.

## Safety and Storage:

Shelf life: 6 months from the date of manufacture in original unopened containers at room temperature.
Transport as non-dangerous goods.

# PACKAGING AND STORAGE

## Packaging

Pails and drums from 5 kg to 200 kg (plastic, steel or plastic-lined steel) and IBCs of 950–1000 kg. The packaging of each grade is given on its product page.

## Storage and shelf life

Store in the original, unopened containers in a cool, dry and ventilated place, away from direct sunlight, heat and ignition sources. Keep away from strong oxidizing agents, acids and alkalis. Shelf life is 6 to 36 months from the date of production, depending on the grade.

## Hydrogen silicone fluids

Si–H materials may release hydrogen in contact with moisture, alcohols, acids, alkalis and metal catalysts. Avoid such contact during storage and ensure adequate ventilation during use.

## Transport and documents

Transport classification: see the current SDS of each grade. Each delivery comes with a certificate of analysis (COA); TDS and SDS are available on request.



Pail



Drum



IBC

# PRODUCT INDEX

Product codes in alphabetical order, with the page of the product.


| | | |
|---|---|---|
| LF-201 | Dimethyl Silicone Fluid | 12 |
| LF-211 | Low Viscosity Dimethyl Silicone Fluid | 11 |
| LF-221 | Ultra-High Viscosity Dimethyl Silicone Fluid | 14 |
| LF-ACM11 Series | Acrylate-Modified Silicone Fluids | 81 |
| LF-AF11 | Amino-Functional Fluorosilicone Fluid | 47 |
| LF-AM11 / AM12 | Alkyl and Alkyl Aryl Silicone Fluids | 77 |
| LF-CF11 | Carbinol-Functional Fluorosilicone Fluid | 48 |
| LF-CHF11 | Hydroxyl Fluorosilicone Copolymer Fluid | 43 |
| LF-CM12 Series | Hydroxyalkyl-Terminated Silicone Fluids | 83 |
| LF-CM14 | Tetrahydroxyalkyl-Functional Silicone Fluid | 83 |
| LF-CMF11 | Methyl Fluorosilicone Copolymer Fluid | 39 |
| LF-DPM12 Series | Hydroxyl-Terminated Polyether-Modified Silicone Fluids | 82 |
| LF-EH101 | Methyl Hydrogen Polysiloxane Emulsion | 85 |
| LF-EM102 | Epoxy-Modified Silicone Fluid | 78 |
| LF-H101 grades | Hydrogen Silicone Fluids by Termination | 76 |
| LF-H101H | High Hydrogen Silicone Fluid | 66 |
| LF-H101L | Low Hydrogen Silicone Fluid | 68 |
| LF-H101S | Side-H Silicone Fluid | 69 |
| LF-H101T | Terminal-H (Hydride-Terminated) Silicone Fluid | 71 |
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| LF-HF11 | Silanol-Terminated Fluorosilicone Fluid | 42 |
| LF-HF12 | Hydrogen-Functional Fluorosilicone Fluid | 44 |
| LF-M107 | Mono-Alkoxy Terminated Silicone Fluid | 19 |
| LF-MF10 | Methoxy-Terminated Silicone Fluid | 20 |
| LF-MF11 | Methyl-Terminated Fluorosilicone Fluid | 38 |
| LF-MOHP | Monohydroxyl-Terminated Silicone Fluid | 65 |
| LF-OHP-H | High Viscosity Silanol-Terminated PDMS | 59 |
| LF-OHP-L | Low-Medium Viscosity Silanol-Terminated PDMS | 58 |
| LF-OHP2 | Diphenyl Hydroxy Silicone Fluid | 63 |
| LF-OHPM | Phenyl Methyl Hydroxy Silicone Fluid | 62 |
| LF-OHPV | Vinyl Hydroxy Silicone Fluid | 60 |
| LF-PE101 Series | Polyether-Modified Silicone Fluids | 79 |
| LF-PE102 | Silicone Polyether Surfactant for Rigid PU Foam | 80 |
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| LF-PM12 | Diphenyl Silicone Fluid | 29 |
| LF-PM13 | Phenyl Siloxane | 31 |
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| LF-SE201 | Silicone Emulsion | 86 |
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| LF-VF11 | Vinyl-Functional Fluorosilicone Fluid | 40 |
| LF-VHF13 | Silanol- and Vinyl-Functional Fluorosilicone Fluid | 46 |
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