



# SF1154

## SF1154

### Description

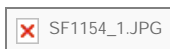
SF1154 polydimethyldiphenyl siloxane fluid is a clear, light straw colored liquid which possesses even better heat stability than the polydimethylsiloxane materials. This outstanding heat resistance is combined with low volatility and high flash point to provide a normal useful service temperature range of -40C to 260C (-40F to 500F).

### Typical Physical Properties

QUALITY	SF96®100	SF1154®	SF1147
Viscosity -40C/-40F	600*	–	4500*
Viscosity -18C/°F	300*	2500*	380*
Viscosity 25C/77F	100	175(150-200)*	49(40-60)*
Viscosity 38C/100F	75*	110*	31 (30-40)*
Viscosity 99C/210F	30*	23*	7.5*
Pour Point (°F)	-67*	-40*	-60*
Flash Point COC (°F Closed Cup)**	>604*	>581*	>527*
Fire Point	> 675*	> 650*	> 600
Specific Gravity (77°/77F)	0.968*	1.050*	0.890
Refractive Index	1.4030*	1.4980	1.4433
Specific Heat	0.36*	0.39*	.48
Thermal Expansion	9.25x10 <sup>-4</sup>	7.50x10 <sup>-4</sup> *	4.00x10 <sup>-4</sup> *
Weight Loss 24 hrs. 150C, %	<0.5	<2	<5
Max. radiation dosage with minimum change	1x10 <sup>7</sup> *	1x10 <sup>8</sup> *	1x10 <sup>8</sup> *

\*\*Indicates test not performed by Momentive\*\*Same values as Pensky Martens Open Cup

Silicone fluids have been used for a number of years in environments subject to radiation of various types. They have been used as a hydraulic fluid in nuclear power stations and on nuclear powered ships. They have operated in Van Allen Belt environments and in laboratory and diagnostic apparatus. The effect of radiation on silicones is a cross linking mechanism which gradually increases the viscosity of the fluid eventually resulting in gelation. Theoretical treatment of these effects will be found in: A.A. Miller, *J. Am. Chem. Soc.* 82, 3519 (1960) A.A. Miller, *J. E.C. Product Research and Development* 3, 3, 1964, pp. 252-256.



Three fluids, as described below, have seen extensive service:

#### SF1154®:

SF1154 fluid is the most common material used in these applications. It is copolymer containing both methyl and phenyl units. It has excellent high temperature stability and can be used from -40 to +282C (-40 to +540F). In addition, SF1154 fluid has excellent radiation resistance and is capable of absorbing up to 5 x 10<sup>8</sup> rads before gelation.

**SF1147:**

This moderately low viscosity (=50 cs/25C, 77F) silicone fluid is the best lubricant of the silicone family. It has high radiation stability gelling at 5 x 10<sup>8</sup> rads.

**SF96® Series:**

Available in many viscosities these fluids are polydimethylsiloxanes. They will operate from -50 to +204C (-58 to +400F). The radiation resistance of SF96 series fluid will depend on the viscosity selected as shown below:

Fluid	M <sub>R</sub> to Gellation
SF96-50	40
SF96-100	20
SF96-500	10
SF96-1000	7

**Potential Applications**

SF1154 is an excellent choice for high temperature heat transfer applications or as a base fluid in high temperature greases. In addition, its excellent electrical properties make it useful as a dielectric coolant, high temperature ultrasonic coupler, high temperature heat bath and oxide protector for solder baths.

**Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

**Product Safety, Handling and Storage**

The warranty period for SF96 & F50 is 24 months and 12 months from date of shipment from Momentive Performance Materials for SF1147 & SF1154 if stored in the original unopened container at 4C to 27C or 40F to 80F

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any Momentive Performance Materials (MPM) representative. **For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center.** Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

**Limitations**

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

From automotive to healthcare, from electronics to construction, products from Momentive Performance Materials Inc. are practically everywhere you look. We are a global leader in silicones and advanced materials with a 70+ year heritage of innovation and being first to market – with performance applications that improve everyday life. By knowing our customers' needs and creating custom technology platforms for them, we provide science based solutions to help customers increase performance, solve product development issues and engineer better manufacturing processes.

**Contact Information** For product prices, availability, or order placement, contact our customer service by visiting [momentive.com/ContactSilicones](http://momentive.com/ContactSilicones).

For literature and technical assistance, visit our website at: [www.momentive.com](http://www.momentive.com)

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