

## SF1147

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#### Description

SF1147 methyl alkyl silicone hydraulic fluid is a combination of a hydrocarbon and a silicone that provides good lubricity in a wide temperature range. The basic polysiloxane structure of alternating silicon-oxygen atoms has been maintained to which organic and hydrocarbon radicals for lubricity, bulk modulus and antioxidants are molecularly attached. This molecular attachment to the silicon atom will provide for a more stable fluid with no additive fallout.

#### Key Features and Benefits

- Excellent viscosity-temperature characteristics
- Excellent thermal and physical properties
- Low thermal expansion
- Good lubricity
- Excellent thermal stability
- No mineral acid formation
- Excellent radiation stability
- Paintable

#### Typical Physical Properties

Property	Value
Appearance	Clear-light to dark amber
Viscosity, cstks @ 232C (450F)	1.8
@ 99C (210F)	7.5
@ 38C (100F)	30-40
@ 25C (77F)	40-60
@ -18C (0F)	380
@ -46C (-50F)	6125
Pour Point	-54C (-65F)
Moisture Content, %	< .050
Flash Point	249°C min. (480°F min.)
Auto Ignition Temperature	> 427C (800F)

Specific Gravity @ 16/16C (60/60F)	.89
Thermal Conductivity (BTU/hr/ft <sup>2</sup> /°F-ft.) @ 25C (77F)	0.113
<b>Property</b>	<b>Value</b>
Specific Heat-BTU/lb.	
150C (300F)	0.484
18C (-0F)	0.365
Thermal Expansion cc/ccF	0.0004
Lubricity-Shell 4 Ball Wear, 150C (300F)-(52100 on 52100 Stell)	<b>Wear Scar Dia-mm</b>
600 RPM 4 Kg.	0.29
10 Kg	0.34
Pour Point	-54C (-65F)
1200 RPM 4 Kg.	0.35
10 Kg.	0.40
3600 RPM 4 Kg.	0.47
10 Kg.	0.71
<b>Bulk Modulus</b> - Adiabatic Tangent 150C (300F) 3000 PSIG	135,210

<b>Thermal Stability</b>		
232C (450F), 72 Hours N2 inerted in Hydrogenation Bomb.		
<b>Properties</b>	<b>Unused</b>	<b>Test</b>
Acid No.	.04	.30
Viscosity @ 99C (210F)	7.5	7.6
Appearance	Clear	Clear
Metal Wt. Change-mg/cm <sup>2</sup>		
Silver	-	-.015
Titanium	-	+.008
Copper	-	.000
440c Stainless Steel	-	-.008
Aluminum	-	-.008
350 Stainless Steel	-	-.023

<b>Thermal Endurance</b>				
Tested for Two Hours in Accordance with MIL-H-27601	<b>Used</b>	<b>316C (600F)</b>	<b>343C (650F)</b>	<b>371C (700F)</b>
Acid No. mgKOH/gm	.04	.36	.20	.21
Viscosity @ 38C (100F)	31.4	30.8	24.2	26.5
Appearance	Clear	Clear	Clear	Clear
Metal Weight Change-mg/cm <sup>2</sup>				
52100	-	-.0002	-.0002	-.0016
M10	-	-.0008	-.0004	-.0008
Bronze (Naval)	-	-.0012	-.0002	-.0002

<u>Radiation Resistance</u> Viscosity vs. Radiation @ 25C (77F) <b>Radiation Dosage - Rads x 10<sup>-6</sup></b>	<b>Viscosity centistokes</b>
0	50
70	70
130	100
218	200
262	200
255	300
285	400
500	Gellation

### Potential\_Applications

- Lubricating impregnant for sintered-bronze, stainless steel and iron bushings
- Flexible cable lubricant (steel on plastic lubricants)
- Additive for petroleum oils
- Hydraulic fluid-51C (-60F) to 232C (+450F) Closed or inerted systems
- 51C (-60F) to 177C (+350F) Open systems
- Base fluid for lubricating greases
- Penetrating oil Hydraulic fluid and lubricant for nuclear equipment, snubbers, etc.
- Shock absorber fluid
- Vacuum pump oil

### Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the 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 is 12 months from date of shipment from Momentive Performance Materials if stored in the original unopened container at 27C (80F) or below.

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any 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

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

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