

## RHODORSIL<sup>®</sup> FLUID 550

**Rhodorsil<sup>®</sup> Fluid 550** is a linear methylphenyl polysiloxane of low viscosity. With a high flash point, **Rhodorsil<sup>®</sup> Fluid 550** is stable over a broad range of temperatures, making it an ideal heat transfer fluid and high or low temperature lubricant. **Rhodorsil<sup>®</sup> Fluid 550** shows no loss of properties even after 1000 hours of use at 250°C (482°F) in contact with air, (contact with lead, however, must be avoided).

### FEATURES

- Serviceable temperature range: -50 to 250°C in open systems, up to 310°C in closed systems
- High flash point: 300°C
- Low volatility
- Small viscosity-temperature variation
- Good resistance to oxidation and gumming
- Good heat transfer characteristics
- Good resistance to radiation

### APPLICATIONS

#### **As a lubricant:**

- Base oil for high temperature ball bearing greases
- Lubricating oil for clockworks submitted to weathering or to high temperatures
- Impregnating oil for sintered bronze bearings in small electric motors and other mechanisms exposed to high temperatures and weathering
- Lubricating oil for plastic gearing

#### **As a heat transfer fluid:**

- Heat finishing baths for specialty metals
- Heat transfer fluid for laboratories apparatus
- Heat exchange fluid for high temperature instrument calibration baths
- As a thermostatic fluid over a temperature range of -50 to 250°C. For best results, the system should be thoroughly cleaned.

#### **As a dielectric fluid:**

- Dielectric liquid and cooling fluid for capacitors, small transformers, and electronic assemblies. **Rhodorsil<sup>®</sup> Fluid 550** retains its insulating properties within a wide temperature and frequency range.

NOTE: **Rhodorsil<sup>®</sup> Fluid 550** has a softening effect on cured silicone resins used to insulate certain components.



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## **TYPICAL PROPERTIES**

Type .....	methylphenylpolysiloxane
Appearance .....	clear, colorless liquid
Viscosity:	
@ -30°C, cSt .....	22,000
@ 25°C, cSt .....	125
@ 35°C, cSt .....	84
@ 100°C, cSt .....	20
Specific Gravity @ 25°C, (77°F) .....	1.07
Volatility, %	
After 4 hours @ 250°C .....	1.2
After 48 hours @ 250°C .....	5.5
After 12 months @ 150°C .....	4
After 12 months @ 200°C .....	15
Gelling time:	
Months @ 200°C .....	14
Hours @ 250°C .....	1200
Hours @ 260°C .....	200
Volume expansion coefficient, cm <sup>3</sup> /cm <sup>3</sup> .°C:	
Between 0 to 50°C, .....	7.55 x 10 <sup>-4</sup>
Between 50 to 100°C, .....	7.53 x 10 <sup>-4</sup>
Between 100 to 150°C, .....	7.55 x 10 <sup>-4</sup>
Between 150 to 200°C, .....	7.70 x 10 <sup>-4</sup>
Between 200 to 250°C, .....	8.04 x 10 <sup>-4</sup>
Compressibility, % :	
@ 7 MPa .....	0.50
@ 21 MPa .....	1.41
@ 28 MPa .....	1.87
@ 35 MPa .....	2.30
@ 70 MPa .....	3.95
@ 140 MPa .....	6.50
Flash point, °C, (°F), Open Cup .....	300 (572)
Freeze point, °C, (°F) .....	-50 (-58)
Refractive index @ 25°C, (77°F) .....	1.495
Surface tension @ 25°C, dynes/cm, .....	24.5
Vapor pressure, mm Hg:	
@ 200°C, .....	1 x 10 <sup>-2</sup>
@ 230°C, .....	0.08
@ 245°C, .....	0.19
@ 265°C, .....	0.63
@ 275°C, .....	1.16
@ 380°C, .....	100

Thermal conductivity, cal./sec.cm. °C .....	3.5 x 10 <sup>-4</sup>
Specific Heat, cal./g.°C	
@ 0°C, .....	0.34
@ 40°C, .....	0.36
@ 100°C, .....	0.39
@ 200°C, .....	0.43
Dielectric strength @ 25°C, (77°F), kV/mm .....	14
Dielectric constant @ 25°C, (77°F) between 0.5 and 100 kHz.....	2.9
Loss angle tangent @ 25°C:	
@ 0.5 kHz .....	5 x 10 <sup>-4</sup>
@ 100 kHz .....	1 x 10 <sup>-4</sup>
Volume resistivity @ 25°C, (77°F), Ω.cm.....	1 x 10 <sup>-14</sup>

Please note: The typical properties listed in this bulletin are not intended for use in preparing specifications for any particular application of Rhodorsil<sup>®</sup> silicone materials. Please contact our Technical Service Department for assistance in writing specifications.

**SAFETY**

Product safety information required for safe use is not included. Before handling, read the Material Safety Data Sheet and container labels for safe use, physical and health hazard information.

**STORAGE AND SHELF LIFE**

When stored in the original, unopened containers at or below 25°C (77°F), **Rhodorsil<sup>®</sup> Fluid 550** has a shelf life of 12 months from date of shipment from Rhodia.

**PACKAGING**

**Rhodorsil<sup>®</sup> Fluid 550** is available in 200 Kg containers. Certificate of Analysis for each lot purchased is available on request.

**RHODORSIL<sup>®</sup>** is a registered trademark of Rhodia.