



## PM-125 High Temperature Dielectric Silicone Fluid

Dielectric Strength: 400 volts/mil Service Temperature: 25°C to 300°C (closed system)



PM-125 High Temp Dielectric Fluid is recommended for service temps of 25°C to 300°C.

**PM-125 Dielectric Silicone Fluid** is a clear, colorless, and odorless silicone fluid that is classified as a Phenylmethylsiloxane (CAS#63148-52-7) with a viscosity of 125cSt @ 25°C. It is formulated for use as a dielectric fluid /heat transfer medium for high temperature ranging from 25°C to 300°C (closed system\*).

**PM-125 Dielectric Silicone Fluid** is characterized by its high dielectric strength, high flash point, high temperature stability, low vapor pressure, high resistance to oxidation, and hydrophobic nature (insoluble in water). It has a high VTC (viscosity-to-temperature coefficient) so its viscosity will lower quickly when heated, allowing for the fluid to be easily pumped.

**PM-125 Dielectric Silicone Fluid** has a dielectric strength of 400 volts/mil and a dielectric breakdown strength (2.5mm)  $\geq 50$ kV. **PM-125 High Temperature Silicone Heat Transfer Fluid** has a Thermal Conductivity value of 0.00035 g cal/cm•sec•°C. Its specific heat value is 1.498k J/kg. K @ 40°C.

When compared to PDMS Silicones (PSF-Fluids), PM-125 Heat Transfer Fluid exhibits much higher thermal stability and resistance to oxidation. Although it is more expensive, it will provide a much longer service life.

**Applications include:** high temperature dielectric coolant, high temperature heat transfer fluid, high temperature bath fluid for laboratory research, high RI index fluid, high temperature silicone damping fluid, high temperature silicone lubricant,

\*Closed system baths are systems from which air has been excluded

### Dielectric Properties

|                            |                             |
|----------------------------|-----------------------------|
| Dielectric Strength.....   | 400 volts/mil               |
| Dielectric Constant 100 Hz |                             |
| @ 25°C.....                | 2.90                        |
| @ 150°C.....               | 2.57                        |
| Dissipation Factor 100 Hz  |                             |
| @ 25°C.....                | 0.0005                      |
| @ 150°C.....               | 0.007                       |
| Volume-Resistance          |                             |
| @ 25°C.....                | $1.0 \times 10^{14}$ ohm-cm |
| @ 150°C.....               | $3.0 \times 10^{12}$ ohm-cm |

### Thermal Properties

|                                       |                          |
|---------------------------------------|--------------------------|
| <u>Specific Heat</u>                  |                          |
| @ 0°C.....                            | 1.418 kJ/kg K            |
| @ 40°C.....                           | 1.498kJ/kg. K            |
| @ 100°C.....                          | 1.615 kJ/kg. K.          |
| @ 200°C.....                          | 1.812 J/kg. K            |
| <u>Thermal Conductivity</u>           |                          |
| @ 25°C.....                           | 0.00035 g cal/cm•sec• °C |
| @ 50°C.....                           | 0.00036 g cal/cm•sec• °C |
| <u>Thermal Gel Time (open system)</u> |                          |
| months @ 200°C.....                   | 14 months                |
| hours @ 250°C.....                    | 1,200 hours              |
| hours @ 260°C.....                    | 200 hours                |

### Volume Expansion Properties

|   |         |
|---|---------|
| <u>Volume Expansion vs. temperature</u> |         |
| -18°C to 149°C.....                     | 0.00075 |
| 150°C to 204°C.....                     | 0.00077 |
| 205°C to 260°C.....                     | 0.00080 |

### Typical Properties

| Viscosity @25C | Specific Gravity | Refractive Index | Pour Point | Flash Point | Surface Tension |
|----------------|------------------|------------------|------------|-------------|-----------------|
| 125cSt         | 1.07             | 1.500            | -51°C      | 315°C       | 24.5            |

### Viscosity Properties

|                                 |                  |
|---------------------------------|------------------|
| Viscosity/Temp Coefficient..... | 0.76             |
| Viscosity @25C.....             | 125cSt (mm2/sec) |
| <u>Viscosity @ temperature</u>  |                  |
| @ 99°C.....                     | 20cSt            |
| @ 38°C.....                     | 84cSt            |
| @ 25°C.....                     | 125cSt           |
| @ -29°C.....                    | 22,000cSt        |

### Packaging

|                                   |                 |
|-----------------------------------|-----------------|
| 1-gallon (3.78 liters) .....      | 8 lbs / 4kg     |
| 5-gallon pail (18.9 liters) ..... | 44 lbs / 20kg   |
| 55-gallon drum (208 liters) ..... | 485 lbs / 220kg |
| F.O.B. Phila, PA U.S.A.           |                 |

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