Thermally Conductive Grease Comparison Chart

MG Cat. No.	860	8616	8617
Conductive Filler	Zinc oxide, silica	Aluminum oxide, zinc oxide	Aluminum oxide
Base Material	Silicone oil	Synthetic oil	Synthetic oil
Shelf Life	5 y	5 y	5 y
Physical Properties			
Color	White	White	White
Odor	Odorless	Odorless	Odorless
Density @25 °C	2.40 g/mL	2.69 g/mL	1.96 g/mL
Viscosity	Thixotropic paste	Thixotropic paste	Thixotropic paste
Evaporation Loss [a)]	0.1%	1.2%	2.3%
Oil Separation [b)]	0.7%	0.02%	1.0%
Dropping Point	>260°C	>300 °C	>308 °C
Water Washout @38 °C	0.1%	0.9%	1.5%
Worked Penetration [c)]	303	287	343
Oil Viscosity Index [d)]	N/A	>110 °C	>110 °C
Lubrication	No	No	No
Bleed Resistant	Yes	Yes	Yes
Corrosion Resistant	Yes	Yes	Yes
Electrical Properties			
Volume Resistivity	1.5×10^{15} Ω·cm	1.8×10^{11} Ω·cm	9.9×10^{9} Ω·cm
Volume Conductivity	6.7×10^{-16} S/cm	5.6×10^{-12} S/cm	1.0×10^{-10} S/cm
Dielectric Strength	400 V/mil	330 V/mil	450 V/mil
Breakdown Voltage	N/A	16 600 V	4 500 V
Dielectric Constant @1 000 cps	3.81	6.77	6.07
Dissipation Factor @1 000 cps	0.003	0.01	0.08
Thermal Properties			
Thermal Conductivity @25 °C	0.66 W/(m·K)	1.78 W/(m·K)	1.0 W/(m·K)
Contact Thermal Resistance @25 °C	0.57×10^{-3} (m²K)/W	0.24×10^{-3} (m²K)/W	0.71×10^{-3} (m²K)/W
Constant Service Temperature	-40 to 200 °C	-68 to 165 °C	-68 to 165 °C

a) Evaporation loss tested for 22 hours at 165 °C [329 °F].
b) Oil separation tested for 30 hours at 165 °C [329 °F].
c) 60 strokes
d) High oil viscosity index of over 100 indicates small oil viscosity changes with temperature

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