

# Thermal Greases



## Improves heat flow between surfaces

### Features and Benefits:

- High thermal conductivity
- Electrically insulating
- Non-capacitive
- Non-curing
- Bleed resistant
- Thin bond lines
- High reliability
- Prevents corrosion

### Applications:

- Maximizing heat transfer by eliminating air gaps between the interface area of heat sinks and heat sources
- Improves heat transfer between heat sinks and CPU's, GPU's, flip chips, semiconductors, transistors, LED's, fans, and other heat generating electronic components

### We offer a selection of three Thermal Greases:

#### 8616 Super Thermal Grease II

Extremely thermally conductive, designed for applications where maximum heat flow is required

- Thermal Conductivity: 1.8 W/(m·K)
- Operating Temperature Range: -68 - +165°C
- Silicone Free

#### 8617 Super Thermal Grease III – Zinc Oxide Free

Zinc oxide free, but still provides high thermal conductivity and reliable performance

- Thermal Conductivity: 1.0 W/(m·K)
- Operating Temperature Range: -68 - +165°C
- Silicone Free
- Ships non-regulated in all sizes

#### 860 Silicone Heat Transfer Compound

Provides good thermal conductivity across a wide operating temperature range

- Thermal Conductivity: 0.66 W/(m·K)
- Operating Temperature Range: -68 - +200°C

# Thermally Conductive Grease Comparison Chart

	860	8616	8617
<b>PROPERTIES</b>			
Fillers	Zinc oxide	Aluminum oxide, zinc oxide, and boron nitride	Aluminum oxide and boron nitride
Base material	Silicone oil	Synthetic oil	Synthetic oil
<b>Thermal Properties</b>			
Thermal conductivity @25 °C [77 °F]	0.66 W/(m·K)	1.78 W/(m·K)	1.0 W/(m·K)
Contact thermal resistance @25 °C	0.57 x 10 <sup>-3</sup> (m <sup>2</sup> ·K)/W	0.24 x 10 <sup>-3</sup> (m <sup>2</sup> ·K)/W	0.71 x 10 <sup>-3</sup> (m <sup>2</sup> ·K)/W
Constant service temperature	-40 to 200 °C [-40 to 392 °F]	-68 to 165 °C [-90 to 329 °F]	-68 to 165 °C [-90 to 329 °F]
<b>Electrical Properties</b>			
Volume resistivity (ρ <sub>v</sub> )	1.5 x 10 <sup>15</sup> Ω·cm	1.8 x 10 <sup>11</sup> Ω·cm	9.9 x 10 <sup>9</sup> Ω·cm
Volume conductivity (σ <sub>v</sub> )	6.7 x 10 <sup>-16</sup> S/cm	5.6 x 10 <sup>-12</sup> S/cm	1.0 x 10 <sup>-10</sup> S/cm
Dielectric strength	400 V/mil [16 kV/mm]	330 V/mil [13 kV/mm]	450 V/mil [17.6 kV/mm]
Breakdown voltage	N/A	16 600 V [16.6 kV]	4 500 V [4.5 kV]
Dielectric constant	3.81	6.77	6.07
Dissipation factor	0.003	0.01	0.08
<b>Grease Properties</b>			
Evaporation loss, 22 h @165 °C [329 °F]	0.1%	1.2%	2.3%
Oil separation, 30 h @165 °C [329 °F]	0.7%	0.02%	1.0%
Dropping point	>260°C [>500 °F]	>300 °C [>572 °F]	>308 °C [>586 °F]
Water washout @38 °C [100 °F]	0.1%	0.9%	1.5%
Worked penetration, 60 strokes, ½ scale	303	287	343
Oil viscosity index	N/A	>110 °C	>110 °C
<b>Physical Properties</b>			
Color	White	White	White
Odor	Odorless	Odorless	Odorless
Density @25 °C [77 °F]	2.40 g/mL	2.69 g/mL	1.96 g/mL
Viscosity	490 Pa·s	365 Pa·s	120 Pa·s

Refer to TDS for more information. N/A=Not available.

## Available Packaging



Tub of 100  
4 g Pouches  
860-4G



3 mL Syringe  
8616-3ML



25 mL Jar  
860-60G  
8616-25ML



85 mL Tube  
860-150G  
8616-85ML  
8617-85ML



1 P Jar  
860-1P  
8616-1P  
8617-1P



1 G Pail  
8616-1G  
8617-1G