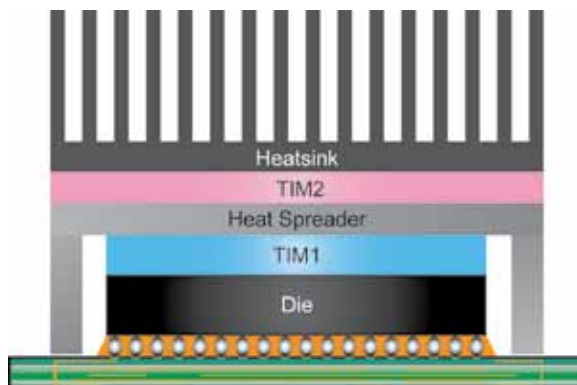


## SilCool\* Silicone Grease Compounds

Momentive's family of SilCool series silicone grease compounds feature outstanding thermal conductive and dielectric properties, excellent workability, virtually no oil separation, and minimal weight loss at elevated temperatures. These high-performance grease products were formulated to help address heat management challenges resulting from higher frequencies, higher power, and miniaturization in the development of electric and electronic devices.

### Key Features

- Highly workable – excels in automated dispensing, screen printing, and stamping applications
- High thermal conductivity
- Wide operating temperature range
- Low oil separation and minimal weight loss at elevated temperatures
- Minimal ionic impurities & excellent dielectric properties

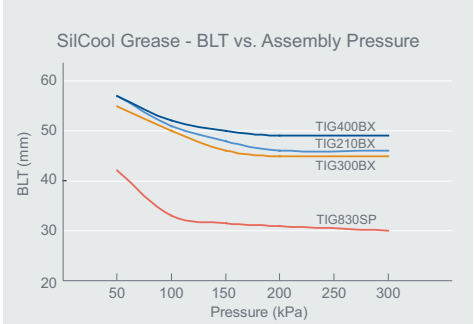
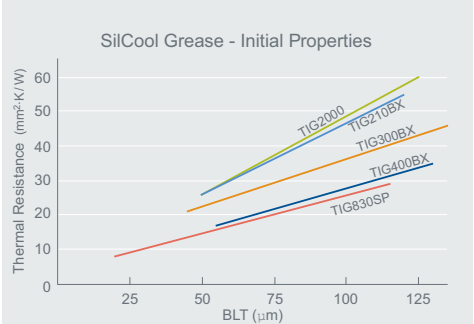


### Product Details

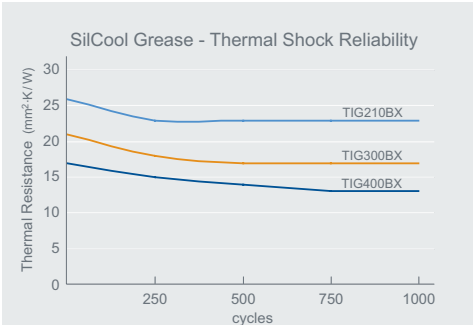
| Properties                                                 | TIG830SP                                          | TIG400BX                                                         | TIG300BX                                                         | TIG210BX                              | TIG2000           | TIG1000           |
|------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|---------------------------------------|-------------------|-------------------|
| Features                                                   | High thermal conductivity, low thermal resistance | High thermal conductivity, low oil bleed, temperature resistance | High thermal conductivity, low oil bleed, temperature resistance | Low oil bleed, temperature resistance | -                 | -                 |
| Property / Color                                           | Gray Paste                                        | Gray Paste                                                       | Gray Paste                                                       | Gray Paste                            | Pale Blue Paste   | White Paste       |
| Thermal Conductivity <sup>1</sup> W/m-K                    | 4.1                                               | 4.0                                                              | 3.0                                                              | 2.1                                   | 2.0               | 1.0               |
| Thermal Resistance <sup>2</sup> (BLT) mm <sup>2</sup> -K/W | 8 (20µm)                                          | 17 (55µm)                                                        | 20 (45µm)                                                        | 26 (50µm)                             | 26 (50µm)         | 33 (50µm)         |
| Specific Gravity (23°C)                                    | 2.88                                              | 3.18                                                             | 3.00                                                             | 2.90                                  | 2.80              | 2.50              |
| Penetration <sup>3</sup> (23°C)                            | 360                                               | 260                                                              | 350                                                              | 345                                   | 400               | 340               |
| Viscosity (23°C) Pa.s                                      | 300                                               | 350                                                              | 200                                                              | 250                                   | 150               | -                 |
| Bleed <sup>3</sup> (150°C/24h) wt%                         | 0.0*                                              | 0.0*                                                             | 0.0*                                                             | 0.0*                                  | 0.1               | 0.1               |
| Evaporation (150°C/24h) wt%                                | 0.3                                               | 0.3                                                              | 0.1                                                              | 0.1                                   | 0.1               | 0.1               |
| Volume Resistivity <sup>4</sup> MΩ-m                       | 1x10 <sup>3</sup>                                 | 3x10 <sup>3</sup>                                                | 5x10 <sup>3</sup>                                                | 1x10 <sup>6</sup>                     | 1x10 <sup>6</sup> | 3x10 <sup>6</sup> |
| Dielectric Strength kV/0.25mm                              | 4.5                                               | 5.0                                                              | 5.0                                                              | 3.0                                   | 5.0               | -                 |
| Volatile Siloxane (D <sub>3</sub> -D <sub>10</sub> ) ppm   | <100                                              | <100                                                             | <100                                                             | <100                                  | <100              | 30                |
| Ionic Content <sup>5</sup> (Na/K/Cl) ppm                   | 0.5, 0.0, 0.1                                     | 0.05, 0.03, 0.3                                                  | 1.0, 0.3, 0.3                                                    | 2.0, 0.0, 0.0                         | -                 | -                 |

<sup>1</sup>Hot wire method, <sup>2</sup>Laser flash analysis on Si-Si sandwiched material, <sup>3</sup>JIS K 2220, <sup>4</sup>MIL-S-8660B, <sup>5</sup>Ion chromatography analysis on water extracts, \*Measurement limit Typical property data values should not be used as specifications

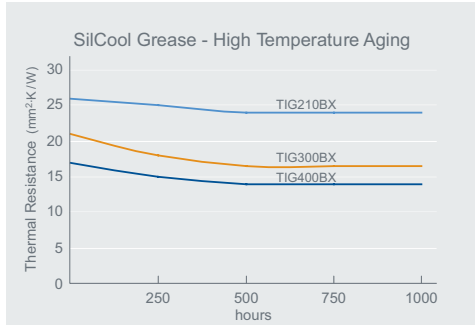
Thermal Resistance is proportional to the thickness of the material through which the heat must travel. The ability to control and reduce thickness (BLT) of the thermal interface is a key factor in the component assembly process. Increases in assembly pressures are known to contribute to reductions in BLT, and subsequently, reduced thermal resistance.



Test Conditions: Sandwich 0.02ml of material between 10mmx10mm silicon dies, and apply desired pressure for 1 minute. Measure BLT.



Test Conditions: Sandwich material between 10mmx10mm silicon dies, and apply 300kPa pressure. Thermal cycle (-55°C~125°C, dwell time 30 minutes at each extreme). Measure thermal resistance using laser flash method.



Test Conditions: Sandwich material between 10mmx10mm silicon dies, and apply 300kPa pressure. Expose to 150°C temperatures up to 1000 hours. Measure thermal resistance using laser flash method.

