

# Dow Corning® Brand TC-5026 Thermally Conductive Compound

*Non-curing, premium performance thermally conductive compound*

## Description

Dow Corning® TC-5026 Thermally Conductive Compound is specially formulated to achieve ultra-thin bond lines, for superior thermal performance. TC-5026's solvent-free formulation employs a unique silicone fluid that interacts with thermally conductive filler particles to form an exceptionally stable matrix that helps to prevent pump-out and other common failure mechanisms. The result is a thermal compound that delivers very low thermal resistance, high reliability and outstanding rheological properties for improved processing.

## Key Features

- Very low thermal resistance
- Formulated to achieve ultra-thin bond lines at low pressure
- High stability and reliability
- Outstanding rheological properties
- Solvent-free formulation

## Potential Uses

Thermal interface material for a variety of mid- to high-end devices

## Typical Applications

- Flip-chip BGAs
- Microprocessors
- Power modules
- Digital micromirror devices
- LED assemblies
- Any interface that requires a high-performance thermal grease

## Application Methods

- Screen print
- Stencil print
- Dispense

## Material Properties

Property	Dow Corning® TC-5026 Typical Values
Description	Thermally conductive compound
Form	Non-curing compound
Viscosity average	60,000 - 140,000 cP
Specific gravity	3.5
Non-volatile content at 120°C	99.92%
Volatile content at 120°C	< 0.1%
Minimum BLT	6 microns
Color	Gray
Thermal resistance (ASTM D5470) @ 40 psi	0.032°C-cm <sup>2</sup> /W
Thermal conductivity	2.87 W/m-K
Volume resistivity	2.0 x 10 <sup>10</sup> ohm-cm
Dielectric strength	208 volts/mil
Dielectric constant at 1 kHz	10.0
Dielectric dissipation factor at 1 kHz	0.31
Container size	1 kg tub
Mix ratio	1-part (no mixing)

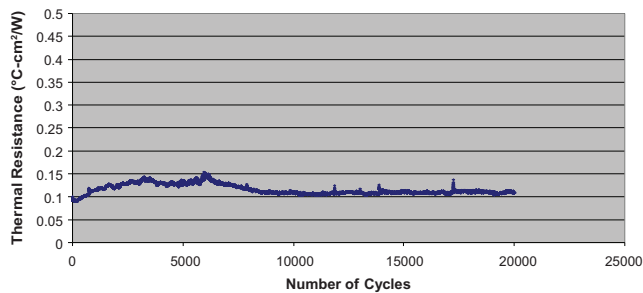
## Important Features and Benefits

Features	Benefits
Ultra-thin bond lines	<ul style="list-style-type: none"> <li>• Reduced thermal resistance</li> </ul>
Highest concentration of advanced silicone fluid interacts with filler particles to create a more stable matrix	<ul style="list-style-type: none"> <li>• Resists pump-out</li> <li>• Greater stability and reliability</li> <li>• Improved processing/printing/dispensing</li> <li>• Consistent viscosity, spreadability and flow</li> <li>• Long shelf life</li> <li>• Stable through heat aging, power cycling and thermal cycling</li> </ul>
Solvent-free formulation	<ul style="list-style-type: none"> <li>• Superior stability and storage</li> <li>• No dry-out during processing</li> </ul>

## Performance Data

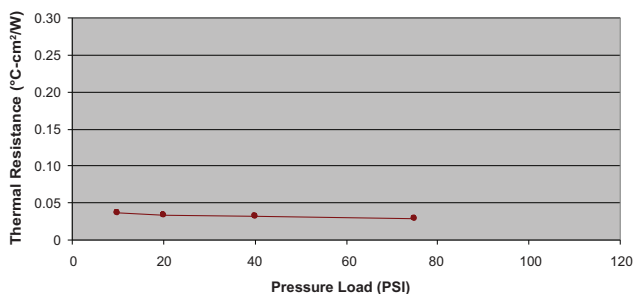
### TC-5026 Thermal Reliability, Power Cycle TTV

The data in this graph was generated on a mobile computing tester with a bare silicon die against a heat sink. The heating and flexing of the bare silicon die is intended to produce an environment where pump-out will occur. This data demonstrates that there is little difference in thermal resistance between beginning thermal performance and 20,000+ cycles, indicating reliability against pump-out and other performance degradation.



TC-5026 Thermal Reliability, Power Cycle TTV. Test run 8 minutes power, 2 minutes cool down. T(lid) reaches ~90°C. 1000 cycles is ~1 week.

### TC-5026 Thermal Resistance and Pressure ASTM D5470



## Learn More

For additional information or Material Safety Data Sheets on the complete line of *Dow Corning*<sup>®</sup> thermal interface management solutions, please call your local sales office, visit [dowcorning.com/electronics](http://dowcorning.com/electronics), or send a message to [electronics@dowcorning.com](mailto:electronics@dowcorning.com).

Front images: AV11148, AV02251

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