



DOWSIL™ TC-3080 Curable Thermal Gel

Description

- One-part, thermally conductive ultra soft gel
- Very low BLT under typical application
- Excellent thermal performance with high thermal conductivity and low thermal resistance.
- Use as dispensable or printable gel
- Cures to ultra soft thermal gel for heat management, and stress relieving and shock damping
- Can be cured at room temperature or accelerated curing at higher temperature for shorter curing time
- Resistance to harsh environments with high reliability

Uses / Applications

- Smart devices
- Arrayed power chips
- Optical interconnects
- 5G communication & autonomous vehicles
- Computers and high-output computing devices
- Telecommunications

Benefits

- High thermal performance
- Can be screen printed or dispensed
- Long working time at room temperature
- Designed for low minimum Bondline thickness (BLT)
- Room temperature or heat accelerated cure
- Low assembly force

Physical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Property	Result	Unit
One or Two Part	One	
Color	Blue	
Specific Gravity, Cured	3.4	g/ml
Viscosity @10s-1 at 25°C	200	Pa.s
Thermal Conductivity	7.0	W/mk
Hardness, Shore 000	60	Shore 000
Extrusion Rate @ 90 psi by 30cc EFD,	60	g/min
BondLine Thickness, @40 psi	40	µm
Cure Time @ 80°C	30	minutes
Dielectric Strength @1 mm	11	Kv/mm
Volume Resistivity	1.0E+14	Ohm.cm
Storage Conditions	< 10	°C

Processing and Application Guidelines

DOWSIL™ TC-3080 Thermal Gel is a one part, silicone based thermally conductive gel with good printability and dispensability. It is supplied as a non-flowable paste and can be pressed lower to below 50 um thickness in typical thermal management application. DOWSIL™ TC-3080 Thermal Gel can be dispensed or screen printed to various thickness and shapes and cured within 30 min at 80°C. To accelerate the curing speed, higher curing temperature can be adopted.

DOWSIL™ TC-3080 Thermal Gel starts cured slowly after being dispensed or printed on substrates at room temperature. And DOWSIL™ TC-3080 Thermal Gel has a long work time at room temperature. Generally, pot life can be more than 30 days at room temperature. In the manufacture of PCB system assemblies, it is often desirable to salvage or reclaim damaged or defective units. DOWSIL™ TC-3080 Thermal Gel has a good balance for its reliability and application. Also, DOWSIL™ TC-3080 Thermal Gel had wettability when using and that contributes excellent thermal performance when using.

DOWSIL™ TC-3080 Thermal Gel should be stored in its original packaging with the cap tightly fastened to avoid any contamination. Stored at cool or condition, suggested temperature is below 10°C. Before processing, the suggested thawing time is 1 hour at room temperature (23°C).

For most uses, DOWSIL™ TC-3080 Thermal Gel should be operational over a temperature range of -45 to 200°C (-49 to 392°F) for long periods of time. However, at both the low- and high- temperature ends of the spectrum, behavior of the materials and performance in particular applications can become more complex and require additional considerations. For low-temperature performance, thermal cycling to conditions such as -55°C (-67°F) may be possible, but performance should be verified for your parts or assemblies. Factors that may influence performance are configuration and stress sensitivity of components, cooling rates and hold times, and prior temperature history. At the high-temperature end, the durability of the cured silicone elastomer is time and temperature dependent. As expected, the higher the temperature, the shorter the time the material will remain usable.

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE

Limitations

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health and Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, dow.com or consult your local Dow representative.

Disposal Considerations

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your Dow Technical Representative for more information.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

dow.com

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