Technical Data Sheet

DOWSIL™ TC-3035 Reworkable Thermal Gel

Features & Benefits

- One-part
- 4.0 W/mk thermally conductive gel
- Re-workable
- High extrusion rate
- Room temperature cure or elevated temperature cure (at 60°C or higher) for fast cure
- Cures to soft gel for thermal transferring, stress relieving and shock damping
- Resists heat, humidity and other harsh environments without cracking or slumping
- Can be dispensed or screen printed to various thickness and shapes for thermal management

Composition

- Polydimethylsiloxane with thermal conductive filler

Applications

DOWSIL™ TC-3035 Reworkable Thermal Gel is suitable for applications including:

- Thermal interface material for smartphone application processor
- Baseband processor or SOC
- Heat dissipation for power modules or other power devices

Typical Properties

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

Property	Unit	Result
One or Two-part		One
Color		Pink
Viscosity (10 s^{-1})	Pa•s	260
Specific Gravity (Cured)	g/cm^3	3.2
Thermal Conductivity	W/mK	4.0
Extrusion Rate	g/min	75
Durometer	Shore 00	75
Tensile Strength	Psi	40
Elongation	%	30
Pot Life at 25°C	days	7
Dielectric Strength	kV/mm	13.2

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Typical Properties (Cont.)

Property	Unit	Result
Volume Resistivity	ohm*cm	1.7 E+14
Curing Time at 80°C	minutes	30
Min BLT (Bond Line Thickness)	Micron	60
Shelf Life from Date of Manufacturing at -10°C	months	12

Description

DOWSIL™ TC-3035 Re-workable Thermal Gel is one-part, heat curable silicone-based thermally conductive gel with good re-workability. It is supplied as non-flowable paste and can be pressed down to 60 um thickness in thermal management application. It can be cured to elastic pad with certain tensile strength and elongation which allows the material to be peeled off easily and completely without residue in rework process.

Application Methods

- Auto/manual dispensing
- Printing

Processing/Curing

DOWSIL™ TC-3035 Re-workable Thermal Gel can be dispensed or screen-printed to various thickness and shapes. Cured at room temperature for several days or at higher temperature for accelerated cure – within 60 min at 60°C and within 10 minutes at 120°C.

Pot Life

DOWSIL™ TC-3035 Re-workable Thermal Gel starts curing slowly after being dispensed on substrates at room temperature. Typically, the viscosity increases over time and will be double after 7 days. And the pot life is about 7 days. That also means higher pressure is needed when pressing the gel to a certain thickness. The working time depends on the highest pressure applied on the devices allowed by the application. Also dispensing time is related with actual conditions and dispensing parameters.

Adhesion and Re-workability

In the manufacture of PCB system assemblies, it is often desirable to salvage or reclaim damaged or defective units. DOWSIL™ TC-3035 Re-workable Thermal Gel has a good balance of adhesion and re-workability. On one hand, the adhesion strength to general substrates of thermal devices like heat sink (aluminum, Al/Mg alloy) and encapsulated chip (epoxy surface) can resist the mechanical and climate reliability ageing test, and on the other hand, the cured material can be peeled off completely without residue in rework process.

Using Temperature Ranges

For most uses, silicone adhesives 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 application 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.

Usable Life and Storage

The product should be stored in its original packaging with the cap tightly fastened to avoid any contamination. Stored at -25°C to -10°C, DOWSIL™ TC-3035 Re-workable Thermal Gel has a shelf life of 12 months after the manufacturing date. Before using, cold DOWSIL™ TC-3035 Re-workable Thermal Gel should be thawed. The suggested thawing time is 2 hours at room temperature (23°C).

Packaging Information

Standard 6 oz (150 ml syringe) packaging size is available for this product. Please contact your local Dow representative for more information on special packaging availability.

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.

How Can We Help You Today?

Tell us about your performance, design, and manufacturing challenges. Let us put our silicon-based materials experience, application knowledge, and processing experience to work for you.

For more information about our materials and capabilities, visit **dow.com**.

To discuss how we could work together to address your specific needs, go to **dow.com** for a contact close to your location. Dow has customer service teams, science and technology centers, application support teams, sales offices, and manufacturing sites around the globe.

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