

Thermally Conductive Silicone Rubber

SILCOOL™ TIA251GF

Product Description

TIA251GF is a two-component, thermally conductive silicone material that is dispensed as a liquid and cured in place to create a heat path for efficient heat transfer. After being applied, its non-slumping pasty consistency provides physical stability to prevent run-off after dispensing. TIA251GF can be used as a liquid dispensed alternative to pre-fabricated Thermal Pads, and as a Gap Filler for a broad array of thermal designs in electronic components.

Key Features and Typical Benefits

- Good thermal conductivity
- Fast, low temperature cure
- Retains softness after cure to contribute to stress relief during thermal cycling
- Easy to use 1:1 mixing ratio
- Conforms to complex shapes of 3-dimensional interface designs
- Flame retardant : UL94V-0 equivalent

Typical Physical Properties

UNCURED PROPERTIES (23 °C, 50%RH)		TIA251GF (A)	TIA251GF (B)
Appearance		Light Blue	Blue
Viscosity ^{*1}	Pa·s	320	320
Mixing ratio by weight or volume		100 :100	
Viscosity after mixing (A/B) ^{*1}	Pa·s	320	
Workable life @ 23 °C	min	90	
Shelf life ^{*2}	Month	9 (Pail) 6 (Cartridge)	
Cure condition	(70 °C) hr	0.5	
	(23 °C) hr	24	
CURED PROPERTIES (30min @ 70 °C)			
Appearance		Blue	
Density	g/cm ³	3.13	
Hardness (Shore E)		50	
Hardness (Shore 00)		80	
Thermal conductivity ^{*3}	W/(m·K)	5.1	
Thermal resistance ^{*4}	mm ² ·K/W	35 (BLT: 130 um)	
Tensile strength	MPa	0.2	
Elongation	%	20	
UL 94 flame retardancy		V-0 equivalent	
Volume resistivity (Ω·cm)		4.0*10 ¹²	
Dielectric strength (KV/mm)		13	

*1: Brookfield #7, 10rpm; *2: Storage temperature ≤27°C *3: Hot-wire method; *4: In-house test method

Typical properties are average data and are not to be used as or to develop specifications.

General Considerations for Use

- Materials such as water, sulfur, nitrogen compounds, organic metallic salts, phosphorus compounds, etc. contained in the surface of the substrate can inhibit curing. A sample patch should always be conducted before proceeding to determine compatibility.
- Wear eye protection when handling uncured rubber as it can irritate eyes. In case of eye contact, immediately flush eyes well with water and contact a physician.
- Maintain adequate ventilation in the work place at all times.
- Store in a cool, dry place out of direct sunlight & keep out of the reach of children

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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