

Thermal Gels or Putties

Thermally Conductive, Form-In-Place Dispensable Gap Fillers

Non-Silicone, One Part, No-Cure Type

- Product Description:** TIM-PUTTY is ‘Ultra Soft’ and highly conformable **one part, paste type, Non-Cure** type gap filler. Its “ultra soft” consistency assures efficient heat transfer between delicate parts where minimum pressure can be tolerated. This Form-in-place gap filler is ideal for applying any thickness with little or no stress. It is designed to provide a thermal solution for the recent trends of integrating higher frequency electronics into smaller devices. TIM-PUTTY easily forms and adheres to most surfaces, shapes and sizes of components with very low compression force. Non-Silicone formulas avoid silicone contaminations to delicate devices. It can be easily dispensed from cartridges or pail using pneumatic dispenser.
- Typical Application:** Gap Fillers are used to fill air gaps between components or PC boards and heat sinks, metal enclosures and chasses. Ideal for application where large gap tolerances are present due to steps, rough surfaces, and high stack-up. Gap Filler materials allow the designer to be less concerned with components proximity to heat sinks or heat spreaders.

Property	Test Method	616	418	418HTC	3W	45	5W	6W
Type			Non-Silicone	Non-Silicone	Non-Silicone	Non-Silicone	Non-Silicone	Non-Silicone
Special Futures		High Temp rated (360°C) Zero Out Gassing.	Low viscosity. High Dielectric.	Medium viscosity. High Dielectric	Tacky Texture. Zero Pump out High Dielectric.	Low viscosity. Tacky Texture. Zero Pump out	High viscosity High Thermal conductivity	High viscosity High Thermal conductivity
Color	Visual	Gray	White	Gray	White	Gray	Gray	Gray
Viscosity 5 rpm @ 25°C, PaS	Brookfield	2400	4500	4900	7000	4400	7000	7000
Specific Gravity, @ 25°C	ASTM D792	3.0	2.7	2.1	2.5	2.3	2.3	2.3
Hardness (Shore 00)	ASTM D2240	<5	<5	<5	<5	<5	<5	<5
Flammability (Equivalent)	UL 94	V-0	V-0	V-0	V-0	V-0	V-0	V-0
Operating Temperature Range.		-40°C to 360°C	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C	-40°C to 150°C
Shelf Life		5 years	5 years	5 years	5 years	5 years	5 years	5 years
THERMAL								
Thermal Conductivity (W/m-K)	ASTM D5470	2.0	2.0	2.5	3.5	4.5	5.0	6.0
ELECTRICAL								
Breakdown Voltage (KV/mm)	ASTM D149	3.0	16	3	14	3	3	3.2
Volume Resistivity (Ohm-m)	ASTM D257	10 ⁹	10 ¹²	10 ⁹	10 ¹²	10 ⁹	10 ⁹	10 ⁹



Silicone, Cure Type Dispensable Liquid Gap Fillers

Product Description:

Product Description: TIM-LGF are thermally conductive liquid gap filler materials formulated to provide a balance of cured material properties, highlighted by “gel-like” modules and good compression set or memory. This material is available in thermally conductive & electrically insulating, one part or two part, room or elevated temperature curing system. Form-in-place gap fillers are ideal for applying any thickness with little or no stress.

Typical Applications: Ideal for circuit boards where multiple packages of variable heights require a thermal path to heat sink or enclosure. Automotive Electronics Control Units (ECU’s), power supplies & semiconductors, memory and power modules and fiber optics telecommunications equipment.

Property	Test Method	2004	2005	2006	2007	2030	2301
Type		Two Parts Silicone	Two Parts Silicone	Two Parts Silicone	Two Parts Silicone	Two Parts Silicone	One Part Silicone
Special Futures		High Viscosity No Slump	Very soft/Gel type cure	Controlled cure, No Slump Grease/Paste type cure	Soft cure High TC	Soft cure High TC Thixotropic	Fast Cure RTV Sealant
Color	Visual	Pink	Grey	Blue	Blue	Green	White
Mixed Viscosity. PaS	Brookfield	150	73	120	80	400	N/A
Mix Ratio		1:1	1:1	1:1	1:1	1:1	N/A
Specific Gravity	ASTM D792	2.8	2.0	2.1	2.5	2.5	1.29
Hardness (Shore 00)	ASTM D2240	70	<5	Thixotropic Paste	45	35	35
Pot Life @ 25°C		60 min	90 min	24 hrs	90 min	60 min	15 min
Cure Time @ 25°C		24-48 hrs	24-48 hrs	48 hrs	24-48 hrs	24-48 hrs	24 hrs
Cure Time @ 100°C		20 min	30 min	5 min	30 min	30 min	N/A
Flammability (Equivalent)	UL 94	V-0	V-0	V-0	V-0	V-0	V-0
Operating Temperature Range.		-55°C to 204°C	-55°C to 204°C	-55°C to 204°C	-55°C to 204°C	-55°C to 204°C	-55°C to 260°C
Shelf Life (Unopened)		12 months	12 months	12 months	12 months	12 months	12 months
THERMAL							
Thermal Conductivity (W/m-K)	ASTM D5470	2.0	1.2	0.8	1.5	3.5	0.20
ELECTRICAL							
Breakdown Voltage (KV/mm)	ASTM D149	12	12	12	12	13	12
Volume Resistivity (Ohm-m)	ASTM D257	10 ¹²	10 ¹²	10 ¹²	10 ¹²	10 ¹²	10 ¹²