THERMACOOL.

TC100U

Gap Filler, Thermal Interface Materials

Saint-Gobain[®] **ThermaCool**[®] TC100U is an uncured (B-Stage) unsupported thermally conductive solid silicone rubber. This unique thermally conductive silicone gap filler can be used to effectively bond small passive heat sinks to BGA chips. This eliminates the need for mechanical fasteners and provides excellent thermal coupling between the hot processor or device and the heat sink.

The **ThermaCool** TC100U is specially designed to provide the following features:

- High bond strength and low thermal resistance in applications with uneven surfaces such as non-flat heat sinks.
- Effectively bonds plastic BGA surfaces that may have silicone mold release contamination.
- The unique silicone compound provides excellent bond strength to a wide range of substrates including plastic BGAs, anodized aluminium and nickel plated heat sinks which can eliminate mechanical fasteners and less secure tapes.
- The resilient silicone compound provides good vibration isolation of components that also needs thermal transfer.
- Product is supplied in an easy to use roll that ensures the correct amount of bonding and heat transfer material is provided without waste or need for special assembly equipment.

Available Sizes

Thickness: .015, .025, .031, .050 and .063 in (.38, .64, .79, 1.27 and 1.6 mm) Master roll size: 18 in. x continuous yard length

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APPLICATIONS

- Automotive Electronics
- Computers
- CD-ROM Cooling
- Electrical Insulation
- Military
- Medical
- Heat Pipe Assemblies
- Telecommunication
- Electronic modules for power devices for power supplies



ThermaCool TC100U - Properties

Obtained from cured products.

Performance tests are run using standard test procedures. The values presented are typical values and should not be used for specification purposes.

Property	Test Method Value or Rating		
Color	Visual	White	
Thickness, nominal (in)	ASTM D374	.015, .025, .032, .050, .062	
Thermal Conductivity (W/mK)	ASTM E1530	1.3	
Thermal Impedance (°C in.²/W) (1/16")	ASTM E1530	1.25	
Break Strength (psi)	ASTM D412	200	
Elongation (%)	ASTM D412	350	
Hardness (Shore A)	ASTM D2240	65	
Dielectric Strength (volts/mil)	ASTM D149	250	
Operating Temperature Range (°F)	-	-80 to +400	

Note- Application may require surface priming for adhesion. Please contact customer service.

ThermaCool TC100U - Compound Cure Time vs. Compound Temperature

Compound Temperature, °C	Cure Time Range (minutes)	Avg Cure Time T(AvgCT) (minutes)	Lap Shear Strength (psi)
85	7 - 20	14.5	
90	5 - 15	10	53+/-4
95	3 - 7	5	62+/-8
100	2.5 - 6	4.2	
105	2 - 4	3	77+/-9
110	1.5 - 3.5	2.5	
120	1.5 - 3	2.2	

1. Values are typical and should not be used for writing specifications.

2. Cure data was developed using a Monsanto rheometer and is intended as a guide for the users of this material in developing their own process conditions. Cure times should be verified for each end use and assume the center of the silicone has reached the temperature stated for that time.

3. Lap shear strength values are based on optimum cure times with compound between FR-4 panel and black anodized aluminium heat sink. In a BGA/Heat Sink assembly it will be longer than the times shown. The assembled mass will influence the time that the compound needs to reach the cure temperature.

Important Instructions

Because **Saint-Gobain** cannot anticipate or control every potential application, we strongly recommend testing of this product under individual application conditions prior to commercial use.

Shelf Life

6 months after the date of manufacture when stored in original packaging at temperatures below 40°F (5°C). Cold temperature storage is required to avoid premature curing.



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IMPORTANT: It is the user's responsibility to ensure the suitability and safety of Saint-Gobain Performance Plastics products for all intended uses and that the materials to be used comply with all applicable regulatory requirements. Saint-Gobain Performance Plastics assumes no responsibility for any product failures that occur due to misuse of the materials it provides arising out of the design, fabrication or application of the products into which the materials are incorporated.

WARRANTY: For a period of 6 months, Saint-Gobain Performance Plastics warrants this product(s) to be free from defects in manufacturing. The only obligation under any applicable product warranty will be to replace any portion proving defective, or at our option, to refund the purchase price thereof. SAINT-GOBAIN PERFORMANCE PLASTICS DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

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