

# TC100U

## Gap Filler, Thermal Interface Materials

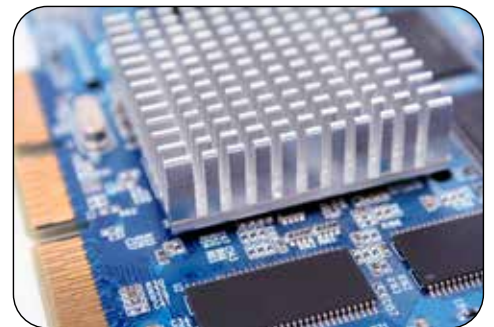
**Saint-Gobain® ThermaCool®** TC100U is manufactured by **Saint-Gobain** Performance Plastics Corporation, Tape Solutions business, and comes with an uncured (B-Stage) unsupported thermally conductive solid silicone rubber. This unique thermally conductive silicone gap filler can be used to effectively 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 intended 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. × continuous yard length



## 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. <sup>2</sup> /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 from date of shipment when stored refrigerated at a maximum of 40°F (4.4°C) < 50% humidity.

**IMPORTANT:** It is the user's responsibility to ensure the suitability and safety of Saint-Gobain products for all intended uses and that the materials to be used comply with all applicable regulatory requirements. Saint-Gobain assumes no responsibility for any product failures that occur due to your actions or inactions, including your use, design, fabrication or application of the products into which the materials are incorporated.

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