

CoolTherm® SC-1600 Thermally Conductive Silicone Gap Filler

Pre-Production Technical Data Sheet

CoolTherm® SC-1600 gap filler is a two-component thermally conductive silicone system designed to provide thermal conductivity for electronic applications, while retaining desirable properties associated with silicones.

Features and Benefits:

Low Stress – exhibits low shrinkage and stress on components as it cures.

Durable – composed of an addition-curing polydimethylsiloxane polymer that will not depolymerize when heated in confined spaces.

Environmentally Resistant – provides excellent resistance to thermal shock, high temperature, and humid environments.

Application:

Mixing – Mix CoolTherm SC-1600 resin with CoolTherm SC-1600 hardener at a 1:1 ratio, by weight or volume. Handheld cartridges or automatic meter/mix/dispense equipment should be used to avoid any air entrapment in the material. Manual mixing is not recommended.

Applying – Apply material using handheld cartridges or automatic meter/mix/dispense equipment.

- Handheld Cartridges

1. Load the cartridge into the applicator gun and remove the end caps.
2. Level the plungers by expelling a small amount of material to ensure both sides are level.

3. Attach mixing tip and expel a mixer's length of material.
4. Apply material to substrate and mate the parts within the working time of the gap filler. Clamp in position until material reaches handling strength.

- Meter/Mix/Dispense (MMD) Equipment

Contact your LORD representative if assistance is needed using this equipment.

Avoid applying CoolTherm SC-1600 gap filler to surfaces that contain cure inhibiting ingredients, such as amines, sulfur, or tin salts. If bonding surface is in question, apply a test patch of gap filler to the surface and allow it to set for the normal cure time. A liquid layer of silicone will remain on the surface if an inhibitor is present.

Curing – Allow material to cure for 24 hours at room temperature (25°C) or for 30 minutes at 100°C. This time-at-temperature profile refers to the time the material should be allowed to cure once it reaches the target temperature. Allowance should be made for oven ramp rates, parts with large thermal mass and other circumstances that may delay material reaching the target temperature.

Shelf Life/Storage

Shelf life of each component is five months when stored at 25°C in original, unopened container.

CoolTherm SC-1600 gap filler evolves minute quantities of hydrogen gas. Do not repackage or store material in unvented containers. Adequately ventilate work area to prevent the accumulation of gas.

Typical Properties*

	SC-1600 Resin	SC-1600 Hardener	Mixed
Appearance	Pink Paste	White to Gray Paste	Light Pink Paste
Viscosity, cP @ 25°C			
10/sec Shear Rate	123,000	78,000	–
1/sec Shear Rate	318,000	208,000	–
Specific Gravity	3.3	3.3	3.3
Working Time, minutes @ 25°C	–	–	60

*Data is typical for experimental batches and not to be used for specification purposes.



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Typical Cured Properties*	
Thermal Conductivity, W/m·K	
Hot Disc Transient Method ISO 22007-2	3.7
Guarded Hot-Plate Method ASTM D 5470	4.2
Hardness Shore OO, ASTM D 2240	85
Tensile Strength, MPa (psi) ASTM D 638	0.48 (69.62)
Elongation at Break, % ASTM D 638	23
Elastic Modulus, MPa ASTM D 638	3.0
Dielectric Strength, kV/mm (V/mil) 1 mm, ASTM D 150	7.6 (193)

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Cautionary Information:

Before using this or any Parker LORD product, refer to the Safety Data Sheet (SDS) and label for safe use and handling instructions.

For industrial/commercial use only. Must be applied by trained personnel only. Not to be used in household applications. Not for consumer use.

Values stated in this document represent typical values as not all tests are run on each lot of material produced. For formalized product specifications for specific product end uses, contact the Customer Support Center.

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