CoolTherm® SC-3000 LD Thermally Conductive Silicone Gap Filler

Technical Data Sheet

CoolTherm® SC-3000 LD (Low Density) gap filler is a low density, two-component silicone system designed to provide excellent thermal conductivity for electronic applications, while retaining desirable properties associated with silicones.

Features and Benefits:

Low Volatility – low volatile content minimizes outgassing.

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 thermal shock resistance.

UL Rated – provides excellent flame retardancy; UL 94 V-0 certified.

Application:

Mixing – Mix CoolTherm SC-3000 LD resin with CoolTherm SC-3000 LD 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 open time of the gap filler. Clamp in position until material reaches handling strength.
- Meter/Mix/Dispense (MMD) Equipment
  Contact your Parker Lord representative if assistance is needed using this equipment.

Avoid applying CoolTherm SC-3000 LD 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 60 minutes at 80°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.

Typical Properties*

	SC-3000 LD Resin	SC-3000 LD Hardener	Mixed
Appearance	Off-white Paste	Pink Paste	Light Pink Paste
Viscosity, cP @ 25°C 5/sec Shear Rate, ASTM D7175	110,000	90,000	–
Specific Gravity	2.4	2.4	2.4
Working Time**, minutes @ 25°C 5/sec Shear Rate	–	–	300

*Data is typical and not to be used for specification purposes.
**Time to double viscosity.

Typical Cured Properties*	
Thermal Conductivity, W/m·K Hot Disc Transient Method, ISO 22007-2	3.0
Hardness Shore OO, ASTM D 2240	75
Tensile Strength, MPa (psi) ASTM D 638	0.3 (43)
Elongation at Break, % ASTM D 638	15
Elastic Modulus, MPa ASTM D 638	4.30
Volume Resistivity, ohm-cm @ 25ºC ASTM D 257	3.5×10^{14}
Dielectric Strength, kV/mm (V/mil) ASTM D 149	16.8 (427)
Cyclic Siloxane Content, ppm ASTM F2466	< 100

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

Shelf Life/Storage

Shelf life of each component is six months when stored upon receipt at 5-30˚C in original, unopened container. Cartridges should be stored tip down.

CoolTherm SC-3000 LD 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.

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.

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