

CoolTherm™ SC-6702 Thermally Conductive Silicone Encapsulant

Description

LORD CoolTherm™ SC-6702 thermally conductive silicone encapsulant is a two-component system designed to provide thermal conductivity for encapsulating sensitive electronic modules.

Features and Benefits

Convenient – easy to use 1:1 mix ratio, by weight or volume.

Primerless Adhesion – adheres without the use of a primer in most applications.

High Thermal Conductivity – provides thermal conductivity for applications where superior heat dissipation is required.

Broad Temperature Range – can be used on parts and devices that experience operating temperatures from -55°C to 260°C.

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

Application

Mixing – Thoroughly mix each component prior to combining resin and hardener. Mix CoolTherm SC-6702 resin with CoolTherm SC-6702 hardener at a 1:1 ratio, by weight or volume. Automatic meter/mix/dispense equipment may be used for high volume production.

Unless a closed-chamber mechanical mixer is used, air may be introduced into the encapsulant system either during mixing or when catalyzing the mixture. Electrical properties of the silicone encapsulant are best when air bubbles and voids are minimized. Therefore, in extremely high voltage or other critical applications, vacuuming may be appropriate.

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

Avoid applying CoolTherm SC-6702 encapsulant to surfaces that contain cure inhibiting ingredients, such as amines, sulfur, or butyl. If bonding surface is in question, apply a test patch of CoolTherm SC-6702 encapsulant to the surface and allow it to set for the normal cure time.

Typical Properties*

	SC-6702 Resin	SC-6702 Hardener	Mixed
Appearance	Red Liquid	White Liquid	Red Liquid
Viscosity, cps @ 25°C	27,000	28,000	30,000
Specific Gravity	2.15	2.04	2.09
Gel Time, min @ 66°C	–	–	25
Working Life, hr @ 25°C	–	–	4

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

LORD TECHNICAL DATA

Typical Cured Properties*

Volume Resistivity, ohm-cm @ 25°C ASTM D 257	1.7 x 10 ¹⁵
Thermal Conductivity, W/mk Hot Disc Transient Method	0.7
Coefficient of Linear Thermal Expansion, ppm/°C ASTM C 864	239
Hardness Shore A	65
Tensile Strength, psi ASTM D 412	600
Elongation at Break, % ASTM D 412	80
Dielectric Strength, V/mil	434
Dielectric Constant @ 25°C 1 MHz, ASTM D 150	5.5
Dissipation Factor @ 25°C 1 MHz, ASTM D 150	0.014

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Curing – Allow encapsulant to cure for 16-24 hours at 85°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 six months from date of manufacture when stored at temperatures up to 40°C in original, unopened container.

Cautionary Information

Before using this or any 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 technical data sheet 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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LORD Corporation World Headquarters

111 Lord Drive
Cary, NC 27511-7923
USA

Customer Support Center (in United States & Canada)

+1 877 ASK LORD (275 5673)

www.lord.com

For a listing of our worldwide locations, visit LORD.com.

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