

Thermoset SC-400 Silicone Encapsulant

Description

LORD Thermoset SC-400 silicone encapsulant is a two-component system designed for encapsulation of delicate electronic components. Thermoset SC-400 encapsulant system cures to an extremely soft, gel-like consistency using either room temperature or heat cure. This encapsulant system contains a UV dye to aid inspection.

Features and Benefits

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

Excellent Adhesion – provides excellent adhesion to most substrates without the use of a primer.

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

Insulative – provides excellent electrical insulation properties; provides thermal, mechanical and vibration damping.

UV Fluorescence - allows material to fluoresce or glow when exposed to a UV light source; helps ensure proper encapsulation of component.

Application

Mixing – Thoroughly stir each component prior to mixing together. Mix Thermoset SC-400 resin with Thermoset SC-400 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 will 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 encapsulant system using handheld cartridges or automatic meter/mix/dispense equipment.

Avoid applying encapsulant system 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 Thermoset SC-400 encapsulant to the surface and allow it to set for the normal cure time.

Typical Properties*

	SC-400 Resin	SC-400 Hardener	Mixed
Appearance	Clear Liquid	Clear Liquid	Clear Liquid
Viscosity, cps @ 25°C	200	120	160
Specific Gravity	0.99	0.99	0.99
Gel Time, min @ 25°C	–	–	25
Working Life, min @ 25°C	–	–	15

*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	9.9 x 10 ¹⁴
Thermal Conductivity, W/mk ASTM D 2214	0.2
Coefficient of Linear Thermal Expansion, ppm/°C @ 25°C	326
Glass Transition Temperature (Tg), °C	-110
Hardness	Soft Gel
Storage Modulus, MPa	2.75 x 10 ⁻³
Dielectric Constant @ 25°C 100 kHz, ASTM D 150	2.7
Dissipation Factor @ 25°C 100 kHz, ASTM D 150	0.005

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

Curing – Allow encapsulant to cure for 90 minutes at room temperature (25°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 actually reaching the target temperature.

Shelf Life/Storage

Shelf life of each component is six months from date of manufacture when stored at 25°C in original, unopened container.

Thermoset SC-400 hardener 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 LORD product, refer to the Material Safety Data Sheet (MSDS) 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.

Information provided herein is based upon tests believed to be reliable. In as much as LORD Corporation has no control over the manner in which others may use this information, it does not guarantee the results to be obtained. In addition, LORD Corporation does not guarantee the performance of the product or the results obtained from the use of the product or this information where the product has been repackaged by any third party, including but not limited to any product end-user. Nor does the company make any express or implied warranty of merchantability or fitness for a particular purpose concerning the effects or results of such use.

"Ask Us How" is a trademark of LORD Corporation or one of its subsidiaries.

LORD provides valuable expertise in adhesives and coatings, vibration and motion control, and magnetically responsive technologies. Our people work in collaboration with our customers to help them increase the value of their products. Innovative and responsive in an ever-changing marketplace, we are focused on providing solutions for our customers worldwide ... Ask Us How.

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.