

CoolTherm™ MT-322 Thermally Conductive Adhesive

Description

LORD CoolTherm™ MT-322 thermally conductive adhesive is a one-component silicone adhesive designed for use in assemblies where thermal dissipation is desired. CoolTherm MT-322 adhesive can be used to bond electronic devices such as memory chips to lids, heat spreaders and heat sinks. The adhesive cures to form a flexible elastomer offering superior high temperature electrical properties.

Features and Benefits

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

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

Excellent Adhesion – provides excellent adhesion to a wide variety of surfaces including silicon, ceramic, plastic and metal.

Broad Temperature Range – can be used on parts and devices that experience operating temperatures from -40°C to +200°C.

Application

Applying – Before use with dispensing equipment, allow adhesive to be warmed to room temperature (ideally 20-25°C). Allow adhesive to warm by placing the syringe in a vertical (upright) position with dispense tip facing downward in an ambient environment. Consult handling instructions** for specific guidelines.

Mount the syringe onto the dispensing equipment that has been thoroughly cleaned and purge adhesive through the system until an unbroken flow of adhesive is extruded.

**Handling instructions are available on LORD.com.

Typical Properties*

Uncured

Appearance	Gray Paste
Viscosity, cps @ 25°C	65,000
Specific Gravity	2.80
Working Life, month @ 25°C	1

Cured

Volume Resistivity, ohm-cm @ 25°C ASTM D 257	2×10^{15}
Thermal Conductivity, W/mk Mathis Hot Disk	1.7
Coefficient of Linear Thermal Expansion, ppm/°C	160
Hardness Shore A, ASTM D 2240	65
Lap Shear Strength, psi ASTM D 1002	305
Dielectric Constant 1 MHz, ASTM D 150	2.9

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

LORD TECHNICAL DATA

Avoid applying adhesive 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 adhesive to the surface and allow it to set for the normal cure time.

Curing – Allow adhesive to cure for 60 minutes at 120°C or for 30 minutes at 150°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 the material reaching the target temperature.

Cleanup – Clean equipment and tools prior to the adhesive cure with solvents.

Shelf Life/Storage

Shelf life is six months from date of manufacture when stored at 5°C in original, unopened container. Syringe must be maintained at 5°C in a vertical (upright) position with the dispense tip facing down. Do not store syringe on its side (horizontally).

CoolTherm MT-322 adhesive 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 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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