

Thermoset™ MT-315 Thermally Conductive Adhesive

Description

LORD Thermoset™ MT-315 thermally conductive adhesive is a silver-filled, one-component adhesive designed for use as a thermal interface adhesive on high power devices such as microprocessors or other applications where superior heat dissipation is required. Thermoset MT-315 adhesive is suitable for use on ceramic and organic substrates, and can also be used as a lid seal adhesive eliminating the need for a second attach adhesive. Thermoset MT-315 adhesive is ideally suited for larger die, up to 25 mm per side.

Features and Benefits

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

Durable – provides excellent resistance to delamination.

Excellent Adhesion – provides excellent adhesion to a wide variety of surfaces including silicon, silver, gold and copper.

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

Excellent Dispensability – allows high-speed, accurate syringe dispensing of fine dots or lines; can be used with time/pressure, positive displacement or linear dispense heads.

Broad Temperature Range – can be used on parts and devices that experience operating temperatures from -55 to +125°C.

Typical Properties*

Uncured

Appearance	Silver Paste
Viscosity, cps @ 25°C 35 mm cone, 2 rpm	85,000
Specific Gravity	3.5
Working Life, hr @ 25°C	24

Cured

Volume Resistivity, ohm-cm @ 25°C ASTM D 257	4.3 x 10 ⁻⁴
Thermal Conductivity, W/mk	11.3
Coefficient of Linear Thermal Expansion, ppm/°C below Tg	52
above Tg	148
Glass Transition Temperature (Tg), °C by TMA	75
Hardness Shore D	90
Lap Shear Strength, MPa	6.21
Storage Modulus, MPa @ 27°C	3200

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

LORD TECHNICAL DATA

Application

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

When dispensing Thermoset MT-315 adhesive, a 22 gauge or larger syringe tip is recommended. 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. For optimum adhesion, the typical bondline thickness of Thermoset MT-315 adhesive should be 3-4 mil.

Curing – Allow adhesive to cure for 50 minutes at 125°C, or for 30 minutes at 150°C. This time-at-temperature profile refers to the time the bondline 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 bondline actually reaching the target temperature.

Shelf Life/Storage

Shelf life is six months from date of manufacture when stored at -40°C in original, unopened container. Syringe must be maintained at -40°C in a vertical (upright) position with the dispense tip facing down. Do not store syringe on its side (horizontally).

This material is shipped and stored frozen. Consult handling instructions for thawing.

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.

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