

CoolTherm™ MD-161 Conductive Adhesive

Description

LORD CoolTherm™ MD-161 conductive adhesive offers excellent electrical conductivity. It is designed for dispensing through small nozzles.

CoolTherm MD-161 adhesive provides excellent adhesion to a wide variety of surfaces including silicon, silver, gold and copper. Its excellent adhesion to SiC and GaN semiconductors make CoolTherm MD-161 adhesive ideally suited for demanding LED assembly applications.

Features and Benefits

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; works with pin transfer equipment to precisely apply very fine dots.

Fast Cure – rapidly cures at 150°C.

Convenient – provides a working life of up to 5 days after loading a syringe into the dispensing equipment at room temperature.

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.

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. The system is now ready to begin dispensing.

***Handling instructions are available on LORD.com.*

Typical Properties*

Uncured

Appearance	Silver Paste
Viscosity, cps @ 25°C 40 mm, Cone 1°, 2 sec ⁻¹	40,000
Specific Gravity	3.5

Cured

Volume Resistivity, ohm-cm	< 0.001
Thermal Conductivity, W/mK	1.9
Coefficient of Linear Thermal Expansion, ppm/°C	
alpha 1	50
alpha 2	180
Glass Transition Temperature, °C by TMA	55
Die Shear Strength, psi	
80x80 mil Silicon Die to Nickel Plated Copper	
@ 25°C	6500
@ 150°C	2400
@ 200°C	900
@ 250°C	700
@ 300°C	400
Storage Modulus, MPa @ 25°C	5000

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

LORD TECHNICAL DATA

Curing – Allow adhesive to cure for 60 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 material reaching target temperature.

Shelf Life/Storage

Shelf life is six months from date of manufacture when stored at -30°C in original, unopened container. Syringe must be maintained at -30°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 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/locations.