

COOLTHERM® TC-501 THERMALLY CONDUCTIVE GREASE

Technical Data Sheet

CoolTherm® TC-501 grease is a solvent-free silicone thermal interface material (TIM) designed to replace greases used as TIMs between the heat spreader and the heat sink (commonly known as TIM2). Unlike commercially available greases that eventually pump out, CoolTherm TC-501 grease was developed using proprietary technology that eliminates pump-out.

CoolTherm TC-501 grease provides high thermal conductivity and low thermal resistance for applications in which superior heat dissipation is required. CoolTherm TC-501 grease can be used in a variety of packages that cannot go through a cure profile normally required by non-grease TIMs or in applications where greases were previously restricted due to the possibility of pump-out.

Features and Benefits

High Reliability: eliminates pump-out; provides excellent resistance to moisture and temperature cycling.

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

Thin Bondlines: achieves thin bondlines of 25-50 microns (1-2 mils), minimizing the thermal pathway and maximizing heat flow.

Reworkability: easily removed with isopropyl alcohol or acetone, eliminating the use of toxic solvents.

Easy to Use: easily dispersed; provides a working life of 24 hours at 25°C.

Application

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

Mount syringe onto the dispensing equipment that has been thoroughly cleaned and purge grease through the system until an unbroken flow of grease is extruded. The system is now ready to begin dispensing.

Cleanup: Disposable containers and utensils are recommended when working with greases. However, when disposable materials are impractical, grease can be removed by cleaning equipment with solvents such as isopropyl alcohol or acetone. Solvent-cleaned utensils should be thoroughly dried before reuse; any remaining solvent can contaminate the next application.

Shelf Life/Storage

Shelf life is six months when stored at -30°C in original, unopened syringe. 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.

[†]Handling instructions are available on parker.com.

Typical Properties*

Appearance	Gray Paste
Viscosity, cP @ 25°C	128,400
Specific Gravity	3.12
Thermal Conductivity**, W/m·K Hot Disc Transient Method, ISO 22007-2	3.6

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

**Dependent on processing conditions. Excellent thermal properties observed after 1000 hr @ 85°C, 85%RH and 1000 hr @ 150°C.

Cautionary Information

Before using this or any Parker 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.

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