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Technical Data | September 2026

3M™ Thermally Conductive Epoxy Adhesive TC-2707

Product Description

3M™ Thermally Conductive Epoxy Adhesive TC-2707 is a thermally conductive 2-part epoxy using aluminum metal filler for good thermal conductivity with high adhesion.

Key Features

- High adhesive strength
- Slight tack allows pre-assembly
- Good surface wet-out
- Low viscosity for potting applications
- Good gap filling
- Thin bonding line
- Good thermal conductivity (0.72 W/m-K)
- Low Cl ion content and outgassing
- Thermally and electrically conductive

Typical Uncured Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the product's Certificate of Analysis (COA) that is shipped with the commercialized product.

3M™ Thermally Conductive Epoxy Adhesive TC-2707	
Property	**Value**
Viscosity* Base Accelerator Mixed	 95,000 cps 25,000 cps 60,000 cps
Base Resin Base Accelerator	 Epoxy Amine
Filler Aluminum	 50% by weight
Mix Ratio (B:A) Volume Weight	 2:1 2.00:0.96
Worklife	60 minutes at 23°C (72°F)

*Viscosity is measured using 40 mm, 2° cone, at 10 S^{-1}.

3M™ Thermally Conductive Epoxy Adhesive TC-2707

Typical Applications

- LED assembly
- Thermal fixing of battery cell and thermal management for EV/HEV battery
- Potting applications
- General gap filling

Application Techniques

For bonding rigid to rigid parts, it is suggested that the bond line thickness and edge fill be designed to optimize:

1. Bond Strength
2. Thermal Resistance

A typical suggested bond line is in the 3-7 mil (0.076- 0.018mm) thickness range. For improved thermal performance (lower Thermal Resistance), a thinner bond line is suggested. A thinner bond line can reduce the bond strength, so each application needs to be tested to find the correct balance of bond line thickness vs. thermal resistance vs. bond strength.

A “fillet” at the edge of a bond line is suggested to increase bond strength. The fillets are formed as the epoxy squeezes out past the side edges. Fillets can add strength to the assembly.

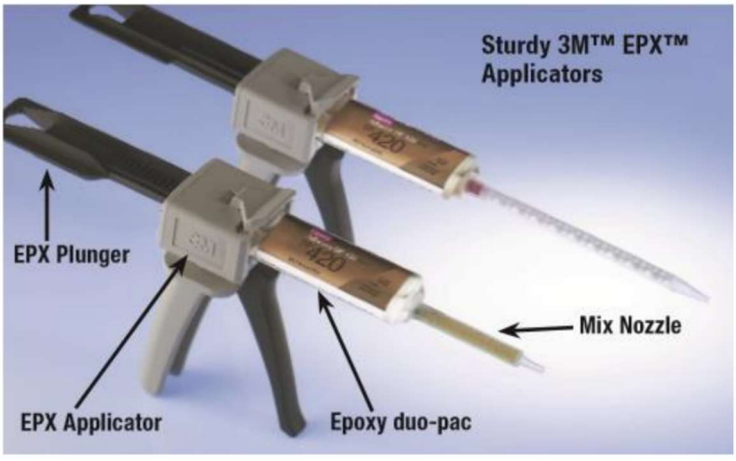
3M™ Thermal Conductive Epoxy TC-2707 is supplied in a dual syringe plastic duo-pak cartridge as part of the 3M™ EPX™ Plus II Applicator System. The duo-pak cartridge is supplied in a 37 or 50 ml configuration. To use the cartridge, simply insert the duo-pak cartridge into the 3M EPX applicator and start the plunger into the cylinders using light pressure on the trigger. Next, remove the duo-pak cartridge cap and expel and discard a small amount of adhesive to be sure both sides of the duo-pak cartridge are flowing evenly and freely (i.e.: no voids, “plugs of adhesive”, dis-continuity in flow, etc.) Once there is even, side to side and uniform flow, from both sides of the duo-pak confirmed, attach the 3M EPX mixing nozzle to the duo-pak cartridge to help ensure proper and uniform mixing of Part A and Part B and begin dispensing the adhesive. Complete and uniform mixing of the two components is required to obtain consistent product performance.

Partially used cartridges must follow the same use instructions as above to help ensure consistent product performance.

Complete and uniform mixing as noted above of the two components is required to obtain consistent product performance.

3M™ EPX™ Plus II Applicator Mix Nozzles

Use only 3M™ EPX™ Plus II Applicator and Mix Nozzles to help ensure optimum product performance.



3M™ Thermally Conductive Epoxy Adhesive TC-2707
Typical Physical Properties and Performance Characteristics

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3M™ Thermally Conductive Epoxy Adhesive TC-2707		
Property	**Method***	**Value**
Color		Gray
Shore D Hardness	D2240	80
Glass Transition Temperature	E1356	See Chart Below
Thermal Coefficient of Expansion	E831	75 x 10^{-6}/°C (below Tg) 160 x 10^{-6}/°C (above Tg)
Thermal Conductivity	D5470	0.72 W/m-K
Thermal Impedance	D5470	3.51 x 10^{-5} K-m/W (1 mil)
Volume Resistivity**	D257	1.6 x 10^{11} Ω-cm
Total Outgassing	D5116	<1000 µg/g (GC/MS, 85°C/3 hrs.)
Siloxane Outgassing	D5116	<5 µg/g (GC/MS, 85°C/3 hrs.)
Extractable Chloride	D7994	<30 µg/g (hexane extraction)

*Methods listed as ASTM are tested in accordance with the ASTM method noted

**Disclaimer if applicable to chart above

As the 3M™ Thermally Conductive Epoxy Adhesive TC-2707 uses aluminum metal fillers, under certain end use application conditions, the effective resistivity and/or effective dielectric strength could be significantly lower than noted. If the metal filler is "trapped" or "pinched" between two surfaces, an electrical bridge path via the aluminum fillers could occur between these surfaces. 3M adhesive TC-2707 is not suggested for application where a powered electrical circuit is used or where a reliable volume resistivity and/or dielectric strength is desired. 3M™ Thermally Conductive Epoxy Adhesive TC-2810 uses ceramic filler and is a suggested product to test for these types of application performance needs.

Curing

Cure Schedule:

- 23°C/24 hours
- 50°C/270 minutes
- 70°C/90 minutes
- 90°C/30 minutes
- 120°C/10 minutes

Note: When manually dispensing, if adhesive has become grainy or lumpy in appearance, this may be due to crystallization of the adhesive. This can be corrected by heating the adhesive in the cartridge to 50°C (120°F) for 30 minutes with the cartridge oriented nozzle up. Allow the adhesive to cool before dispensing.

3M™ Thermally Conductive Epoxy Adhesive TC-2707
Typical Shear Strength, Peel Strength, Tg, vs Cure Temperature/Time

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3M™ Thermally Conductive Epoxy Adhesive TC-2707			
Property	**23°C (72°F) 24 hrs.**	**90°C (194°F) 30 mins.**	**120°C (248°F) 10 mins.**
Overlap Shear N/mm2 (psi) ASTM D1002	>18.62 (2700)	>18.62 (2700)	>18.62 (2700)
T-Peel (piw) ASTM D1876*	>7	>7	>7
Tg (°C) ASTM E1356*	60	66	66

*Methods listed as ASTM are tested in accordance with the ASTM method noted

Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Epoxy Adhesive TC-2707 is 12 months from the date of manufacture when stored in original packaging material and stored at 21°C (70°F) and 50% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is manufactured and is deemed commercially available from 3M. The COA contains the 3M specifications, test methods, and test results for the product's performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

3M™ Thermally Conductive Epoxy Adhesive TC-2707

Regulatory: For regulatory information about this product, contact your 3M representative.

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