

CoolTherm™ EP-6007 BLK Epoxy Resin

Description

LORD CoolTherm™ EP-6007 BLK resin is a ceramic-filled epoxy resin specifically formulated for use with CoolTherm or Thermoset™ hardeners to create a two-component system. This system is recommended for use as a thermally conductive, thin bondline adhesive for attaching semiconductors to heat sinks, and as a low viscosity potting and casting product for applications where thermal conductivity and non-burning properties are required.

Features and Benefits

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

Electrically Insulative – provides excellent high voltage insulation.

Low Exotherm – exhibits low exotherm heat rise during room temperature cure.

Broad Temperature Range – can be used on parts and devices that experience operating temperatures from -55°C to +130°C.

UL Rated – provides excellent flame retardancy; UL 94 V-0 certified; meets requirements of Military Specifications MIL T-27 and MIL I-16923.

Application

Mixing – Thoroughly stir CoolTherm EP-6007 BLK resin within its shipping container to ensure uniform dispersion. Use of power mixing equipment is recommended. Transfer amount of resin needed to a clean container and add proper amount of hardener by weight.

Thoroughly mix epoxy system. Be careful not to whip excessive air into the epoxy. If necessary, remove entrapped air by evacuating material prior to pouring.

Applying – Apply epoxy system using automatic meter/mix/dispense equipment.

Curing – Cure time will vary depending on hardener used. Refer to cure schedules indicated below. Time-at-temperature profiles refer to the time the material should be allowed to cure once it reaches the target temperature. Allowance should be made for material mass, oven ramp rates, parts with large thermal mass and other circumstances that may delay material reaching the target temperature.

Typical Properties* of Resin Mixed with Hardener

	CoolTherm EP-6010 Hardener	Thermoset Hardener No. 67
Mix Ratio, by Weight Resin to Hardener	100:5.5	100:9.0
Working Life, hr @ 25°C	2	8
Cure Time, hr @ 25°C	12-16	–
@ 65°C	–	16**
@ 100°C	–	5**
@ 130°C	–	3**

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

**Cure schedule suitable for pourings of up to 227 grams in a concentrated mass.

Typical Properties*

Appearance	Black Liquid
Viscosity, cps @ 25°C	15,000
Specific Gravity	1.69

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LORD TECHNICAL DATA

Shelf Life/Storage

Shelf life is one year from date of manufacture when stored at 25°C in original, unopened container.

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.

Typical Cured Properties*

	CoolTherm EP-6010 Hardener	Thermoset Hardener No. 67
Volume Resistivity, ohm-cm @ 25°C	2 x 10 ¹⁶	2 x 10 ¹⁶
Thermal Conductivity, W/mK	0.6	0.5
Coefficient of Linear Thermal Expansion, ppm/°C		
alpha 1	47	42
alpha 2	122	140
Glass Transition Temperature (T _g), °C by TMA	54	94
Hardness Shore D	85	85
Tensile Strength, psi @ 25°C	8400	9800
Elongation at Yield, %	0.7	1.2
Moisture Absorption, % 10 days @ 25°C	0.4	0.4
Linear Shrinkage, in/in	0.002	0.003
Dielectric Strength, V/mil	490	500
Dielectric Constant @ 25°C 100 kHz	4.3	4.4
Dissipation Factor @ 25°C 100 kHz	0.02	0.02

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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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