G6-EPOXY®

G6E-HRBN

THERMALLY CONDUCTIVE EPOXY, HIGH OPERATION TEMPERATURE , ROOM TEMPERATURE CURING

DESCRIPTION

Our G6E-HRBN® Epoxy has been specifically formulated adhesives that not only bond materials together but also facilitate the transfer of heat. These epoxies are especially valuable in applications where heat dissipation or thermal management is critical. G6E-HRBN cures at room temperature which eliminates the necessity for a heating oven, but still maintains a high operating temperature. To achieve this, the G6E-HRBN® Epoxy is formulated with a blend of proprietary nanomaterials, additives and fillers, ensuring high performance and adaptability to a wide range of conditions. Moreover, a defining feature of the G6E-HRBN® Epoxy is its incorporation of a proprietary graphene additive. Loading the adhesive with graphene enhances its cracking resistance, making it more resilient and capable of withstanding thermal cycling, mechanical stresses, and temperature variations without developing cracks or compromising the integrity of the bond.

FEATURES:

High Thermal Conductivity (1.2 W/mK): It helps in dissipating heat quickly, preventing thermal issues like overheating and performance degradation.

Durability: A thermal conductive adhesive with excellent mechanical properties can withstand thermal expansions, mechanical stresses, and environmental conditions without compromising the bond's integrity.

Chemical Resistance: resists chemicals, oils, and moisture, ensuring long-term performance in various environments.

Room Temperature Curing: is suitable for applications where heating may not be feasible or where components may be sensitive to high temperatures.

Strong Electrical Resistance: Strong electrical resistance is a crucial characteristic for thermal conductive adhesives, especially in electronic applications. It prevents electrical short circuits and maintains the electrical integrity of the assembly.

Temperature Resistance: High-temperature epoxy is designed to resist temperature up to 250 ºC (500F)

TYPICAL APPLICATIONS:

Electronic Assembly: helps in transferring heat away from sensitive electronic components, ensuring proper thermal management and preventing overheating.

Thermal Interface Materials (TIMs): filling of microscopic gaps and imperfections in the interface, ensuring better contact and improved heat dissipation.

Solar panels: helps in enhancing the overall efficiency and reliability of solar panels.

Aerospace and Aviation: managing heat dissipation and ensuring reliable operation in demanding environments.

Automotive Applications: in bonding electronic control units (ECUs), power modules, and other heat-generating components to heat sinks or chassis, ensuring effective heat transfer and thermal stability.

LED Lighting: ensuring proper thermal management and preventing degradation of LED performance due to excessive heat.

Medical Devices: bonding of heat sinks or thermal management components to these devices, aiding in heat dissipation and maintaining stable performance.

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SPECIFICATIONS OF UNCURED MATERIAL

TWO COMPONENT SYSTEM:	Part A – smooth gray paste, Part B – light brown liquid
MIX RATIO:	10 (Part A) to 1 (Part B) by weight.
WORKING TIME:	20-30 min
DENSITY:	PART A: 1.4-1.5 g/cm³ PART B: 0.9-1.1g/cm³
CURING SCHEDULE:	8-10 hours @ 25°C / 77°F, 30 minutes @ 60°C / 140°F, 10 minutes @ 150°C / 302°F
MIXED VISCOSITY:	100 -130 Pa·s @ 25°C / 77°F

SPECIFICATIONS OF CURED MATERIAL

THERMAL CONDUCTIVITY:	1.2 W/m · K
GLASS TRANSITION TEMPERATURE (Tg):	140°C / 300°F
FLEXURAL MODULUS:	8-9 GPa at 25°C
LOSS MODULUS:	280- 380 MPa at 25°C
HARDNESS, SHORE:	>80 D

The information provided is based on data and tests believed to be accurate. Graphene Laboratories, Inc. makes no warrantees (expressed or implied) as to accuracy and assumes no liability in connection with any use of this product.

GENERAL INFORMATION:

MIXING INSTRUCTIONS:	Stir both components before use. Add Part B to Part A and mix slowly until uniform in a separate container.
STORAGE & SHELF LIFE:	6 months @ 25°C / 77°F in unopened, unmixed containers. Stores and ships at room temperature. No freezing is required.
SHIPPING & HANDLING:	Always read both SDS before use. Use product with adequate ventilation. Keep away from sparks and open flames. Avoid prolonged contact with skin and breathing of vapors. Wash with soap and water to remove from skin.
ABOUT G6-EPOXY™:	All G6-EPOXY® specifications are for normal use and routine applications. Please consult with our team to ensure the most appropriate selection of G6-EPOXY® products. Depending upon your application requirements, a custom G6-EPOXY® formulation may be available.

G6-EPOXY® is a trademark owned by Graphene Laboratories, Inc.

G6-EPOXY®
Graphene Laboratories, Inc.
760 Koehler Avenue, Suite 2
Ronkonkoma, NY 11779

Web: https://g6-epoxy.com
Phone: 631-405-5115
Fax: 781-287-1248
Email: support@graphenelab.com