



G6-EPOXY™

G6E-TSAL™

THERMALLY CONDUCTIVE , NON-ELECTRICALLY CONDUCTIVE, LOW VISCOSITY EPOXY

DESCRIPTION:

Our G6E-TSAL™ Epoxy has been specifically developed for general purpose applications that necessitate the bonding or connecting of thermally conductive components/materials. It is designed to provide efficient heat transfer between components or surfaces, while also providing the bonding and adhesive properties of a traditional adhesive. This product is unique in that it also requires strong electrical resistance, thereby broadening its range of possible applications. To achieve this, the G6E-TSAL™ Epoxy is formulated with

FEATURES:

Low Viscosity: our adhesive has a relatively thin consistency, making it easier to apply and spread evenly over the surfaces to be bonded. This property allows for better coverage and reduces the chances of air entrapment, ensuring improved thermal contact between the bonded components.

Thermal Conductivity (1.8 W/mK): Our adhesive ensures efficient heat transfer from the heat-generating component to the heat sink or other thermal management components. It helps in dissipating heat quickly, preventing thermal issues like overheating and performance degradation.

Graphene Loaded: Graphene is a two-dimensional material known for its excellent mechanical and thermal properties.

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.

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-TSAL™ 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.

Room Temperature/Oven Curable: Room temperature curing is suitable for applications where heating may not be feasible or where components may be sensitive to high temperatures. Oven curing provides faster and more controlled curing conditions, allowing for efficient production processes.

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.

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

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.



SPECIFICATIONS OF UNCURED MATERIAL

TWO COMPONENT SYSTEM:	Part A – smooth gray paste, Part B – smooth white paste
MIX RATIO:	2 (Part A) to 1 (Part B) by weight.
POT LIFE:	2-3 hours
DENSITY:	PART A: 0.9-1.0 g/cm ³ PART B: 0.9-1.1 g/cm ³
CURING SCHEDULE:	24 hours @ 25°C / 77°F or 3 hours @ 80°C / 176°F or 45 min @ 150°C / 302°F
MIXED VISCOSITY:	40 to 50 Pa·s @ 25°C / 77°F

SPECIFICATIONS OF CURED MATERIAL

THERMAL CONDUCTIVITY:	1.8 W/m·K
GLASS TRANSITION TEMPERATURE (T _g):	64°C / 147°F (cured at 80°C/176 °F)
FLEXURAL MODULUS:	6-9 GPa at 25°C
LOSS MODULUS:	280- 380 MPa at 25°C
HARDNESS, SHORE:	>70 D

The information provided is based on data and tests believed to be accurate. Graphene Laboratories, Inc. makes no warranties (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:	12 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.

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