

TIM-813

One Part, Thermally Conductive Epoxy Adhesive

TIM-813 is a thermally conductive, one part thixotropic epoxy adhesive. With a relatively low heat cure, it develops excellent bond strength to most substrates including metals, wood, engineering thermoplastics, composite matrix and ceramics. It offers high heat transfer, low shrinkage and low coefficient of thermal expansion. This adhesive is principally used to form thermally conductive joints in fabricated heat sinks and between heat sinks and power devices. Typical applications include fabricating heat sinks, bonding semiconductors and transistors to heat sinks and general purpose bonding of electronic components.

TYPICAL HANDLING PROPERTIES:

Adhesive	TIM-813
Viscosity at 25°C, centipoise	Paste
Pot life at 80°C, minutes	30
Shelf life at 25°C, months	4

Recommended Cure	1 hr/100°C+1 hr/150°C
Alternate Cure	30 min/150°C

TYPICAL CURED PROPERTIES AFTER RECOMMENDED CURE:

(Tested @ 25°C unless otherwise indicated)

Color	Black
Specific Gravity	2.1
Hardness, Shore D	90
Lap shear strength to aluminum, psi	
At 25°C	2620
At 100°C	2400
Water Absorption (24 hr at RT), %	0.1
Thermal Conductivity, Btu.in/hr.°F.Ft ²	10.5
Glass Transition Temperature, °C	145
Coefficient of Thermal Expansion, 10 ⁻⁶ /°C	
From -55°C to 25°C	27.5
From 25°C to 100°C	37.8
Dielectric Strength, Volts/mil	460
Dielectric Constant at 1 kHz	5.3
Dissipation Factor at 1 kHz	0.04
Volume Resistivity, ohm-cm	6x10 ¹⁵

INSTRUCTIONS FOR USE:

1. Use dispensing equipment for best results.
2. For small applications, apply the product using a syringe or clean spatula.
3. Avoid air entrapment to obtain optimum cured properties.
4. Proceed with the bonding application and cure as recommended.
5. Typical cured properties were determined using recommended cure schedule. Some difference in properties may occur with the alternate or other cure schedules.

AVAILABILITY:

Packaged in Pint, Quart, and Gallon size.

FOR INDUSTRIAL USE ONLY:

Practices of good housekeeping, safety and cleanliness should be followed before, during and after use.

WARNING!

Adequate ventilation of work place and ovens is essential. These materials may cause injury to the skin following prolonged or repeated contact and dermatitis in susceptible individuals. In case of skin contact, wash thoroughly with soap and water. For eyes, flush immediately with plenty of water for at least 10 minutes and seek medical attention. Refer to Material Safety Data Sheet (**MSDS**) for additional health and safety information.