

70-3812NC

HIGH THERMAL TRANSFER EPOXY

DESCRIPTION:

70-3812NC is a two component, aluminum filled epoxy system. This system is used for making heat resistant tools, parts, or bonds that require the highest thermal conductivity and heat resistance.

70-3812NC has good heat dissipation making this a popular choice for a variety of heat sink applications. Common heat sink bonding applications include fin to base, folded-fin set to base, pin-fin set to base, and cold plate tube to extruded base. 70-3812NC is formulated with high performance materials and additives that give heat sink manufacturers improved adhesion and processing advantages.

70-3812NC **passes NASA's outgassing requirements** per ASTM E-595-07.

FEATURES:

- Excellent Thermal Conductivity
- Superior Adhesion
- Low Viscosity allows quick self leveling

TYPICAL PROPERTIES:

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|--|-----------------------|
| Viscosity, cps, 25°C | |
| Resin | 130,000 |
| Mixed | 8,000 |
| Color | Gray |
| Hardness, Shore D | |
| 25°C | 90 |
| 100°C | 65 |
| Mix Ratio, by weight | 100:10 |
| Operating temperature, °C | -55 to +155 |
| Working time, 100 grams, 25°C | 5 Hours |
| Specific Gravity, 25°C | |
| Resin | 1.85 |
| Catalyst | 0.97 |
| Mixed | 1.81 |
| Tensile Strength, psi, 25°C | 9,000 |
| Lap Shear, Aluminum to Aluminum, 1" overlap | 2,500 |
| Compressive Strength, psi, 25°C | 18,500 |
| Coefficient of Thermal Expansion, °C | 28 x 10 ⁻⁶ |
| Thermal Conductivity, W/m·°K | 4.5 |

| | |
|------------|------|
| Outgassing | |
| % TML | 0.91 |
| % CVCM | 0.07 |

INSTRUCTIONS FOR USE:

- 1) Thoroughly mix components separately since some settling of fillers may occur.
- 2) By weight thoroughly mix 100 parts 70-3812 NC epoxy resin with 10 parts 70-3812C.
- 3) Cure according to one of the following schedules:

| | |
|-------|---------------|
| 25°C | 24 Hours |
| 65°C | 45 Minutes |
| 125°C | 15-20 Minutes |

To reduce the viscosity of the resin and help with air release, warm the resin to moderate temperatures (30 – 40 °C) before adding the curing agent. Some settling is common during storage and transit. Premix resin thoroughly before adding curing agent.

PREPARATION OF SURFACES:

Surfaces to be bonded must be clean and grease free. Adhesion can be substantially increased by abrading the surface with a material like emery cloth or sandpaper. A roughened porous surface will produce the best results. Any oxidized metal films should be removed just prior to application of the adhesives.

STORAGE, HANDLING, & SAFETY:

70-3812NC should be stored at room temperature. The expected shelf life is 12 months in original unopened containers.

Please read the Safety Data Sheet before using this or any other chemical.

AVAILABILITY:

70-3812NC is available in quarts, gallons, and 5-gallon pails.

IMPORTANT:

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