

ALUMINUM FILLED BONDING RESIN

CC3-450 is a medium viscosity, aluminum filled, bonding resin used in the assembly of heat sink components and the attachment of heat sinks to sources of heat or cold. This resin system is the most widely used bonding agent in the heat sink industry with a history of many varied applications over the last thirty years. There is real industry acceptance for this product at all of the major heat sink suppliers for their bonded heat sink requirements. In the typical bonded fin heat sink the contribution of the bonded fin joint to the overall thermal resistance of the full heat sink is from 1 to 3%. The primary contribution to the thermal resistance of bonded heat sinks is the convective contribution between the air and the finned surface. The second most significant factor is the base spreading conductive resistance and the fin conductive resistance. Good joint design and clean, rough surfaces produce superior joints that generally exceed the mechanical requirements of the application while remaining an insignificant contributor to the overall thermal resistance of the bonded fin heat sink.

APPLICATIONS

- Fin-to Base
- Chill Plate Tube-To-Extruded Base
- High Performance Chill Plate pressed Tube to Base

| PROPERTIES | ENGLISH | METRIC |
|---|-------------------------------------|------------------|
| Specific Gravity @ 25°C | 1.79 | |
| Viscosity (uncatalyzed @ 75°C) (catalyzed @ 30 °C) | 6,500 - 7,000 cP | 6,500 - 7,000 cP |
| | 6,500 - 7,000 cP | 6,500 - 7,000 cP |
| Thermal Conductivity | 31.5 BTU-in/hr-ft ² -°F* | 4.54 - 200 W/mK* |
| Tensile Strength | 8900 psi | 61.4 MPa |
| Compressive Strength | 18500 psi | 128 Mpa |
| Bond Shear Strength (1" overlap) | 3600 psi | 24.8 Mpa |
| Coefficient of Thermal Expansion | 15.5 µin/in-°F | 27.9 µm/m-°C |
| Cure Temp | 149 °F | 65 °C |
| Operating Temperature Range, continuous | -94 to 383 °F | -70 to 195 °C |
| Standard Color | Metallic Aluminum | |

* The thermal conductivity is 4.5 W/mK. However, the thermal conductivity of an assembled heat sink can approach the thermal conductivity of the basic metal depending upon design and construction.