

DELTABOND™ 152

DeltaBond™ 152 adhesive is ideal for general cementing; thermally bonding semiconductors and components to chassis or heat sinks, while electrically isolating one from the other; fabricating heat sinks or thermal links; and for all permanent bonding of assemblies which require high thermally conductive interfaces. It produces a rigid, high strength bond to most materials when cured. **DeltaBond™ 152** is available in bi-packs, kits, and quarts. Order one bottle of hardener A-4 or B-4 per one quart of **DeltaBond™ 152** separately.

Shelf life: 152KA, 3 years.



Characteristics	Hardener Type	
Typical Handling Properties	EH-9P	EH-21
Mix ratio by weight, (Adhesive/Hardener)	100/3.5	100/7.5
Mixed viscosity at 25°C, cPs	75,000	25,000
Thermal resistivity - (°C) (in.) watt	30 min	60 min
Recommended Cure	6 hrs/24°C + 4 hrs/100°C	8 hrs/25°C 4 hrs/100°C
Alternate Cure	24-48 hrs/25°C	24-48 hrs/25°C

NOTES

Since the hardener/resin reaction is exothermic, it is important that batch size be matched to hardener speed. Working times given are for approximate batch sizes: A—200 gms, B—200 gms. Larger batch sizes will greatly reduce working time.

** For optimum electrical properties, dry parts for 15 minutes at 150°F (65°C) or 30 minutes at 75°F (24°C) to slowly evaporate the thinner and then final cure for 4 hours at 275°F (135°C).

- After initial cure, material may be handled, removed from fixture, etc., but has not yet achieved full properties and should be room temperature aged or post-cured as shown to achieve full physical and electrical properties.
- After initial cure, material may be brought to full physical and electrical properties during post-cure or may be room temperature aged for charted length of time to achieve same full properties. The information contained herein is based on data believed to be reliable but we do not assume responsibility for accuracy. All such information is used at the customer's own risk, conditions of use being beyond our control.

Tested at 25°C unless otherwise indicated

Typical Cured Properties After Recommended Cure:		
Characteristics	EH-9P	EH-21
Color	Blue	Blue
Specific Gravity	2.25	2.20
Hardness, Shore D	92	88
Lap shear strength to aluminum, psi	2000	3000
Linear Shrinkage (%)	0.20	0.45
Water Absorption (24 hr immersion at RT), %	0.10	0.07
Service Temperature (Continuous)	-40-150°C	-55-130°C
Service Temperature (Continuous)	-40-190°C	-55-150°C
Thermal Conductivity, W/mK	1.0	0.90
Glass Transition Temp. (T _g), °C	80	68
Glass Transition Temp. (<T _g), °C	35	39
Glass Transition Temp. (>T _g), °C	100	115
Thermal Conductivity, W/mK	1.0	1.0
Flexural Strength, psi	14,700	14,300
Flexural Modulus, psi	1.0x10 ⁶	1.0x10 ⁶
Dielectric Strength, Volts/mil	400	430
Dielectric Constant at 1 MHz	5.0	6.0
Dissipation Factor at 1 MHz	0.028	0.037
Flexural Modulus, psi	1.0x10 ¹⁵	1.0x10 ¹⁵



COOLVATION

Innovative Thermal Solutions

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5 STEP THERMAL ENGINEERING GUIDE From Concept To Cooling

COOLVATION provides thermal management engineering services to improve products' thermal performance while applying cost effective solutions to eliminate unnecessary manufacturing costs. COOLVATION is a seamless resource extension for our customers' thermal & mechanical engineering teams from ideation to lab testing.



Customer Thermal Challenge

- Physical limitations
- Power constraints
- Air flow/ fluid conditions
- Environmental conditions
- Component specifications
- Define ideal state



Execution

- Concept analysis (CFD-ansys/ ice pack, fin optimizations software)
- Solid model
- Analysis & verification
- Cost analysis



Global Manufacturing

- Global manufacturing facilities
- Global warehousing
- Global labs to support future program

01
STEP

02
STEP



Collaboration

- Review conditions
- Statement of work to customer
- Historical consideration along with cutting edge technologies to provide cost effective solution



Solution & Verification

- Dedicated new product development center
- Prototype
- Physical thermal lab testing
- Proven manufacturability

04
STEP

03
STEP

05
STEP