

THERMAL COMPOUNDS, ADHESIVES, INTERFACE MATERIALS, HARDWARE, INSTALLATION TOOLS
DeltaBond™ 155


DeltaBond™ 155 is an epoxy adhesive formulated for use within the semiconductor industry. An easy to mix spread thixotropic paste, it offers high heat transfer, low shrinkage, and a coefficient of thermal expansion comparable to that of copper and aluminum. This adhesive is principally used to form thermally conductive joints in fabricated heat sinks and between heat sinks and power devices. When used to bond semiconductors to heat sinks, it also serves as an electrical insulator. Its strong bond to a wide variety of substrates resists severe temperature cycling. DeltaBond™ 155 is only available in kit size. Simply squeeze out equal lengths and mix to uniform color.

DELATABOND™ 155		Hardener Type DeltaBond™ 155
Characteristics		
Typical Properties Fully Cured		
Thermal conductivity - W/(m) (°K) (Btu)(in.)/(hr) (ft²) (°F)		0.836 5.8
Thermal resistivity - (°C) (in.)/watt		47
Bond shear strength - 1 in. overlap - psi etched aluminum to etched aluminum	77°F 125°F 212°F	2,600 ---- ----
Heat distortion point - °F		130
Minimum dielectric strength, v/mil, 0.125 in. sample		400
Max operation temp - °C	Continuous Intermittent	65 100

DELATABOND™ 155	
Mixing Proportions and Working Properties	
Parts of hardener per 100 parts of resin	by volume 100
*Working time - at 77°F	90 min
†Initial cure time	77°F 8 hrs 150°F 45 min 250°F 20 min
‡Post-cure time at a temp in °F	4 hrs @ 200°F
‡Alternate room temp. aging time at 77°F	4 days
Working consistency (77°F)	paste
Working viscosity (77°F) cps	paste

DELATABOND™ 155			
Model Number	Ordering Guide - Resin and Hardener		
	Resin		Hardener
	Part No.	Container	Part Number
DeltaBond™ 155	155	Kit (3 oz resin, 3 oz hardener)	Included in P/N 155

DeltaBond™ 156


DeltaBond™ 156 Thermally Conductive Adhesive is a modified acrylic adhesive designed for permanent mounting on components where heat must be effectively transmitted. Recommended for electromechanical assemblies to bond components and dissipate heat, it replaces mechanical fasteners and compressible pads, silicon grease, and epoxies; eliminates air entrapment, and other variables related to epoxy mixing. This soft paste requires no mixing and flows easily to allow thin bond lines. Primer activated, cure begins upon assembly. DeltaBond™ Activator fixtures at room temperature in less than 5 minutes. Full strength is developed in 4 to 12 hours and fillets become dry to the touch in 24 hours. It is not recommended to use this durable adhesive without the use of DeltaBond™ Activator. DeltaBond™ 156 is available in kit size; order 156-K (25 ml Syringe and Activator Kit).

DELATABOND™ 156		
Characteristics	Description	
Typical Properties Fully Cured		
Test	Results	ASTM
Temperature Range	-65 to 300°F (-54 to 149°C) 350°F (177°C) Intermittent	
Tensile Strength, at break	2360 psi	D638
Modulus	233,000 psi	D638
Elongation, at break	7.75%	D638
Outgassing	2.5% TLM 0.05% CVCM	E595
Coefficient of Thermal Expansion	7.1 x 10 ⁻⁴ (cm/cm°C)	
Tensile Shear	2500 psi	D1002
Thermal Conductivity, K (absolute at 86°F (30°C))	3.47 Btu x in./hr ft² °F (0.50 W/m°C)	

Note: The absolute thermal conductivity test was developed specifically for measuring thermal properties of thin film adhesive bonds.

DELATABOND™ 156		
Typical Electrical Properties		
Test	Results	ASTM
Dielectric Strength	220 volts/mil	D149
Dielectric Constant, 77°F (25°C)		D150
100 Hz	14.92	
1000 Hz	14.26	
1MM Hz	12.34	
Dissipation Factor, 77°F (25°C)		D150
100 Hz	0.05	
1000 Hz	0.03	
1MM Hz	0.06	
Volume Resistivity	5.2 x 10 ¹¹ (ohms-cm)	D257
Surface Resistivity	8.6 x 10 ¹³ (ohms)	D257

Note: DeltaBond™ Thermally Conductive Adhesive-High Strength contains a metallic filler which, in certain applications, may have an effect on electrical properties. Therefore, test each particular application to ensure that electrical properties are as required.

DELATABOND™ 156			
Model Number	Ordering Guide - Resin and Hardener		
	Resin		Hardener
	Part No.	Container	Part Number
DeltaBond™ 156	156-K	Resin Kit Hardener Syringe - 0.85 fl oz - 25 ml - 2 oz net/0.44 oz fl contents bottle - 12 ml	Included in kit hardener with brush applicator - 4.2 oz total wt/kit

*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, C—500 gms, D—5 lbs. Larger batch sizes will greatly reduce working time.

† 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.