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DATA SHEET: G5000 HIGH STRENGTH EPOXY

Description: G5000 is a two component filled epoxy with high strength bonds for joining fiberglass and carbon fiber composites with extremely high shear strengths. It also has excellent adhesion to metals, plastics, woods, and ceramics as well. Cures to a very high strength bond that is also non-brittle to eliminate flexing cracks. Easy to mix 1 to 1 ratio by weight and volume. Mixes to a smooth creamy paste that when applied eliminates drips, sagging, or runoff. Does not require any thickening or strength additives as epoxy is ready to use as supplied. The adhesive cures relatively quickly and can be handled within a few hours. Cures to an easy to paint off white color but pigment can be easily added to provide almost any color desired.

It has excellent mechanical properties, high shear and peel strength, great adhesion, good chemical and environmental resistance, good thermal shock resistance and very low shrinkage. It has low exotherm during cure for filling large mass voids.

Uses: Joining and bonded fiberglass, carbon fiber, composites, any where a high strength non-brittle bond is needed. Great for attaching composite rocket fins, bulk plates, nose cone hardware and especially for professional grade fin fillets.

Mixing and Cure Instructions:

Ratio by weight:	Resin	100	Hardener	100
Ratio by volume:	Resin	100	Hardener	100

Pot life (100 gram mass at 72°F) = 30 to 40 minutes ASTM D2471
Handling time = 3 to 4 hours
Full cure = 6 to 8 hours

Physical Properties (@ 72°F/ 22°C):

Color	Off white but can be pigmented to black or any color.	
Shore “D” hardness	85	ASTM D2240
Viscosity Resin	Paste	
Viscosity Hardener	Paste	
Viscosity Mixed	Paste	
Specific gravity, Resin	1.52	
Specific gravity, Hardener	1.48	
Specific gravity mixed	1.50	
Tensile strength	7,600 psi	ASTM D638
Compression strength	14,800 psi	ASTM D695
Elongation at break %	6.3%	ASTM D638
Typical operating temperature	-50°F to 175°F	
Maximum use temperature	225°F (107°C)	
Deflection temperature	150°F (66°C)	ASTM D648
Shelf Life	1-1/2 Years	

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DIRECTIONS FOR USE G5000 HIGH STRENGTH EPOXY

Preparation: All surfaces being bonded should be free of mold release, oil, grease, and dirt. Sand with 60 to 80 grit to rough up the areas to be bonded. A well roughed up surface will greatly increase the surface area the epoxy will bond to and greatly increase the bond strength.

Mixing: Measure out equal parts of A and B by weight or "eyeball" by volume. Mix together until a uniform color and consistency is reached. Mix for approximately 1 to 2 minutes scraping the sides and bottom of containers to avoid any unmixed material. At this time a pigment color can be added to color the epoxy. Mix in a few drops or squirts of the pigment at a time until the desired color and shade is reached. Mix as completely as possible.

Application: Apply mixed epoxy to the area to be bonded. Even though the material is a paste it will flow a little bit after applied if used right away. If you do not want any material flow at all when applied this can be accomplished by waiting approximately 15 to 30 minutes after epoxy is mixed before using, this will allow the epoxy to stiffen up and retard flow. If you need to work the epoxy after applied such as a fillet on a rocket fin or repairing a hole in a tube use isopropyl alcohol, this can be applied to a tool or a finger to push, move, and/or smooth out the curing epoxy. Also isopropyl alcohol can be used to thin the epoxy and also clean up any uncured epoxy.

Curing: Use a clamp, jig, or improvised device to prevent movement during initial curing time. Parts can be handled in about 3 to 4 hours if necessary, but full curing time is about 6 to 8 hours and bonded parts can be put into light service at this time. 24 hours cure is recommended for obtaining the highest strength. Curing can be speed up by using an oven to place the bonded parts in, full curing can be obtained in 1 hour at 140 Degrees F. Also heat can be applied to the mixed material before being bonded to accelerate the curing time, a device such as a heat gun can be used to warm up the epoxy in a cup prior to being applied. Also if you encounter air bubbles in an surface area such as a fin fillet running a heat gun quickly above them will help eliminate them.