

4600

Fibre Glast Developments Corporation
 385 Carr Drive
 Brookville, Ohio 45309
 Phone: 800.214.8572
 Fax: 937.833.6555
www.fibreglast.com

System 4600 High Temp Infusion Epoxy Resin



Our System 4600 Hi-Temp Infusion Epoxy is an excellent option for composite tooling that requires higher service temperatures. This low viscosity epoxy system has found good acceptance for use in vacuum infusion fabrication and tooling processes. The low mixed viscosity of this system allows it to penetrate the reinforcing materials easily and completely, producing a void-free, dense composite component and making it an ideal selection for molds and tooling. System 4600 has very good hot strength, so cured parts or tooling fabricated with it can provide good service in elevated temperature operating conditions up to 300°F.

In the thin film of the infusion process, System 4600 Hi-Temp Infusion Epoxy will gel hard in 18 to 24 hours at temperatures around 77°F. At this point, the laminate must be post cured to complete its cure and develop full physical properties and heat capabilities. A typical post cure would be: Gel at room temperature, followed by an oven post cure of 3 to 4 hours each at 150°F and 250°F, followed by a final cure of at least 8 hours at 300°F. If the final curing temperature can be increased to 375°F instead of 300°F, then 4 to 6 hours at the 375°F temperature will complete the cure. This cure cycle will result in reliable, durable, long-lasting parts and tooling. A post-cure temperature exceeding the expected service temperature is necessary for high temperature applications.

If necessary, warm and stir until uniform.
 Store and use at 70°F to 90°F

Features & Benefits

- This epoxy system does not contain methylene dianiline (MDA), or any other potentially harmful aniline derivatives.
- Mixed viscosity of 575 cps flows easily.
- 80-90 minute pot life at 77°F.
- Will gel at in 18-24 hours at 77°F.

Tips

- Allow material to gel completely prior to removal from mold.
- Post Cure Schedule: 150°F for 3-4 hours, 250°F for 3-4 hours, 300°F for 8 hours (or 375°F for 4-6 hours)

Product Specifications	4600 Epoxy Resin	4690 Hardener	ASTM
Color	Amber	Amber	Visual
Viscosity, @ 77°F Centipoise	1800 cps	40 cps	D2393
Specific Gravity, gms./cc	1.14	0.96	D1475
Mix Ratio, By Weight		100:22	PTM&W
Mix Ratio, By Volume		5:1	PTM&W
Pot Life, 4 fl. oz. Mass @ 77°F		80-90 Minutes	D2471

Information present herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.

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Product Specifications	4600-A/B *1	ASTM
Color	Amber	Visual
Mixed Viscosity, Centipoise	575 cps	D2393
Cured Hardness, Shore D	84 Shore D	D2240
Specific Gravity, Grams, CC	1.105	D1475
Tensile Strength, psi Laminate - 10 oz. (7500) Fabric	37,100 psi	D638
Tensile Strength, psi Laminate - 8 oz. (181) Fabric	46,970 psi	D638
Elongation at Break, % - Laminate - 10 oz. (7500) Fabric	2.10%	D638
Elongation at Break, % - Laminate - 8 oz. (181) Fabric	1.60%	D638
Tensile Modulus, psi - Laminate - 10 oz. (7500) Fabric	3,988,675 psi	D638
Tensile Modulus, psi - Laminate - 8 oz. (181) Fabric	3,197,430 psi	D638
Flexural Strength, psi - Laminate - 10 oz. (7500) Fabric	59,110 psi	D790
Flexural Strength, psi - Laminate - 8 oz. (181) Fabric	74,727 psi	D790
Flexural Modulus, psi - Laminate - 10 oz. (7500) Fabric	2,612,766 psi	D790
Flexural Modulus, psi - Laminate - 8 oz. (181) Fabric	3,345,683 psi	D790
Compressive Strength, psi	15,007 psi	D695
Compressive Modulus, psi	384,653 psi	D695
Izod Impact Strength, ft-lbs / in of Notch, Method A - Notched	1.7	D256
Glass Transition Temperature, DMA: Tg Onset (E')	272°F - 302°F	D4065
Coefficient of Thermal Expansion, Range 40°C - 60°C	3.755 x 10 ⁻⁵ in./in./°F	D696

*1: Tensile and flexural properties were determined with 0.125 inch laminates made by resin infusion method with Style 7500, 10 oz. tooling cloth and Style 181, 8 oz. industrial fabric.