



System 1000 Epoxy Resin

Part # - 1000, 1010, 1025

Features & Benefits:

- 1000 Epoxy Resin is a low viscosity, unfilled, light amber laminating resin for general purpose part and mold fabrication.
- When used with either of the hardeners listed here, the combinations provide excellent wet-out of fiberglass, carbon and aramid fibers.
- Special additives have been incorporated into these products to promote chemical adhesion of fabrics made with these fibers.
- These products can be considered low toxicity materials that have minimum hazard potential when used properly and in a clean and responsible manner.
- 1000 does not contain methylene dianiline (MDA), or other potentially harmful aniline derivatives.
- Neither the resin nor the hardeners will crystallize in normal shipping and storage conditions. Both components have excellent moisture resistance, for minimal problems in high humidity environments.

DESCRIPTION

System 1000 Epoxy Resin is an easy to use, low viscosity, light amber laminating resin that is designed for general purpose part fabrication. Use this system for moisture resistant marine applications. This system has better heat resistance than other general purpose epoxies. Its low viscosity and great handling characteristics make it a favorite in the shop too!

Two high performance hardener systems are available for the System 1000 resin, 10 minute and 25 minute pot life versions. This added variety allows the fabricator to select the system best suited to the size, complexity, or time-frame of the project. Simple parts or quick repairs should use the 10 minute hardener. Larger and more complex parts can use the 25 minute pot life hardener.

Chopped strand mat contains a binder which prevents proper bonding with any epoxy resins. Use our polyester or vinyl ester resins with chopped strand mat.

HANDLING and CURING

System 1000 will cure completely at room temperature with either 1010 or 1025 hardener, no additional heat is required for full properties to develop. Either hardener will provide a durable clean cured surface with no surface blush or sticky residue. Through-cure and time-to-sand will vary with hardener selection do to the varying gel times. Generally time-to-sand for each hardener will be 3-4 hours with 1010 and 6-7 hours with 1025. Both systems will cure hard overnight and will reach their full properties in 2-3 days at normal ambient temperatures (72-75°F). Both systems were developed for these temperatures. Warmer temperatures will shorten these times somewhat and cooler conditions will lengthen the times.

If adding heat via an external heat source, be careful using heat guns and lamps, as they tend to concentrate heat, producing localized hot spots which can damage the epoxy. The maximum safe service temperature for this resin is 155°F.

SAFETY and HAN DLING

Epoxy products are made from raw materials carefully chosen to minimize or even eliminate toxic chemicals, and therefore offer the user high performance products with minimum hazard potential when properly used. Generally, the epoxy resins and hardeners will present no handling problems if users exercise care to protect the skin and eyes, and if good ventilation is provided in the work areas. However, all epoxy resins and hardeners can be irritating to the skin, and prolonged contact may result in sensitization; and breathing of mist or vapors may cause allergenic respiratory reaction, especially in highly sensitive individuals. As such, avoid con tact with eyes and skin, and avoid breathing vapors. Wear protective rubber apron, clothing, gloves, face shield or other items as required to prevent contact with the skin. In case of skin contact, immediately wash with soap and water, followed by a rinse of the area with vinegar, and then a further wash with soap and water. The vinegar will neutralize the hardener and lessen the chances of long term effects. Use goggles, a face shield, safety glasses or other items as required to prevent contact with the eyes. If material gets into the eyes, immediately flush with water for at least 15 minutes and call a physician. Generally, keep the work area as uncluttered and clean as possible, and clean up any minor spills immediately to prevent accidental skin contact at a later time. Keep tools clean and properly stored. Dispose of trash and empty containers properly. Do not use any of these types of products until Material Safety Data Sheets have been read and understood.

Product Specifications

	1000	1010	1025	ASTM Method
Color	Lt. Amber	Amber	Amber	Visual
Viscosity, @ 77° F, centipoise	850 cps	1500 cps	200 cps	D2392
Specific Gravity, gms./cc	1.14	1.06	0.99	D1475
Mix Ratio, By Wt	By Weight	100 : 19	100 : 17.5	
	By Volume	5 to 1	5 to 1	
Pot Life, 4 fl. Oz. Mass @ 77° F		11 minutes	23 minutes	D2471

Typical Mechanical Properties

	1000 w/ 1010	1000 w/ 1025	ASTM Method
Mix Ratio by weight by volume	100 : 19 5 to 1	100 : 17.5 5 to 1	
Pot Life, @ 77° F	11 minutes	23 minutes	D2471
Color	Lt. Amber	Lt. Amber	Visual
Mixed Viscosity, @ 77° F, cps	900 cps	500 cps	D2393
Cured Hardness, Shore D	87 Shore D	86 Shore D	D2240
Specific Gravity, grams, cc	1.13	1.12	D1475
Tensile Strength, psi ⁽¹⁾	46,168 psi	42,784 psi	D1111
Elongation at Yield, % ⁽¹⁾	1.8%	1.68%	D1111
Tensile modulus, psi ⁽¹⁾	2.73 x 10 ⁶ psi	2.68 x 10 ⁶ psi	D638
Flexural Strength	46,382 psi	44,688 psi	D790
Flexural Modulus	2.71 x 10 ⁶ psi	2.71 x 10 ⁶ psi	D790
Izod Impact Strength	0.66	0.74	D256
Glass Transition Temp. T _g	155.1° F Onset 183.9° F Peak	153.3° F Onset 192.7° F Peak	DMA D4065
Thermal Coef. Of Expansion Range:	1.5 x 10 ⁻⁵ in./in./° F	1.5 x 10 ⁻⁵ in./in./° F	D696

Properties Derived with 1000/1010 Laminate, Hand Lay-up, Style 1010 Glass Fabric, 1000/1025 5% Glass Content