

System 2000 Epoxy Laminating Resin 2000, 2020, 2060, 2120



Overview: System 2000 Epoxy Laminating Resin is a medium viscosity, light amber laminating resin that is designed for fabricating parts and other demanding structural applications. Use this system to maximize the physical properties of carbon fiber, Kevlar, and glass laminates! Test results have proven superiority over other room temperature epoxies. It's medium viscosity and great handling characteristics make it a favorite in the shop too! Resin available in quarts, gallons, 5 gallon pails and drums. Hardeners available in 1/2 pint, quarts, gallons and 5 gallon pails.

Features & Benefits:

- 2000 Epoxy Resin is a medium viscosity, unfilled, light amber laminating resin that is designed for structural production applications.
- When used with the three 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.
- 2000 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.

Typical Cure Schedule of System 2000 Epoxy Resin:

	2020	2060	2120
Mix Ratio by Weight	100:23	100:27	100:27
Mix Ratio by Volume	4:1	3:1	3:1
Pot Life, 4 fl. oz. mass	18-20 mins	60-65 mins	120-140 mins

Typical Product Properties:

	2000 2020	2000/2060				2000 2120	ASTM METHOD
		Unreinforced	With Fiberglass	With Graphite	With Kevlar		
Mix Ratio	100:23 By Weight 4:1 By Volume	100:27 By Weight, or 3 to 1 By Volume					
Pot Life, @77 °F	18-20 mins	60-65 mins				120-140 mins	D2471
Color	Lt. Amber	Light Amber				Lt. Amber	Visual
Mixed Viscosity, @ 77°F, cps	950-975 cps	900-950 cps				925-975 cps	D2393
Cured Hardness, Shore D	86-88 Shore D	86-88 Shore D				85-87 Shore D	D2240
Specific Gravity, grams, cc	1.12-1.13	1.107-1.11				1.12-1.13	D1475
Density, lb./cu Inch	.042	.0401				.0410	D792
Specific Volume, cu. In./lb.	24.4	25.0				24.4	D792
Tensile Strength, psi (1)	45,326 psi	9828 psi	45,170 psi	75,640 psi	45,400 psi	45,870 psi	D638
Elongation at Break, % (1)	1.93%	1.90%	1.96%	0.91%	1.31%	1.98%	D638
Tensile modulus, psi (1)	2.53 x 10 ⁶ psi	418,525 psi	2,620,000 psi	8,170,000 psi	3,770,000 psi	2,520,000 psi	D638
Flexural Strength, psi (1)	65,308 psi	16,827 psi	62,285 psi	96,541 psi	34,524 psi	66,667 psi	D790
Flexural Modulus, psi (1)	2.83 x 10 ⁶ psi	462,910 psi	2,560,000 psi	6,480,000 psi	2,500,000 psi	3,050,000 psi	D790
Glass Transition Temp., Tg	180°F	196°F				194°F	TMA
Thermal Coef. Of Expansion Range:	3.73 x 10 ⁻⁵ in./in./°F	4.3x10 ⁻⁵ in./in./°F				4.15x10 ⁻⁵ in./in./°F	D696

(1) Fiberglass Properties Derived With A 10 Ply Laminate, Hand Lay-up, Style 181 Glass Fabric, 55% Glass Content; Graphite Properties With A 10 Ply Laminate of 5.6 oz. 3K Fabric; and Kevlar Properties With A 10 Ply Laminate of 5 oz. Kevlar.

Product Specifications:

	2000	2020	2060	2120
Color	Lt. Amber	Amber	Amber	Amber
Viscosity	1,650 cps	200-250 cps	190-200 cps	200-250 cps
Specific Gravity	1.15	1.065	.96	.95

Mixing Directions:

Using clean glass, plastic or paper containers measure out the proper portions of epoxy and hardeners as specified on the hardener label. Mix thoroughly for at least one minute, making sure to scrape material from the edges and the bottom of the container. Once the resin and hardener have been combined, realize that the mix will begin to gel in the time specified under "Pot-Life" on the Hardener label.

Mix only the materials that can be applied before the resin gels. We suggest that you start by mixing small amounts of material and then let your experience determine the size of future batches. Measure the resin and hardener. DO NOT attempt to alter the cure time by modifying this ratio. Clean up tools with lacquer thinner, Acetone, or alcohol.

Safety and Handling:

System 2000 Epoxy Laminating System contains ingredients which could be harmful if mishandled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn. Individuals should wash with soap and water before eating, or drinking. Individuals should observe conditions of good industrial hygiene and safe working practice. For more detailed instructions on handling please see the MSDS sheet.

All containers should be properly labeled to prevent accidental ingestion or improper disposal. Individuals should reseal any partly used material back in the container. Store under cool, dry conditions away from open flames and high temperatures. For more detailed instructions on storage please see the MSDS sheet.