

EcoPoxy Product Specifications
Updated 23 July 2011

Description

ER500 is a low viscosity clear laminating resin that is designed for structural production applications. When used with the two hardeners listed here, the combinations provide excellent wet-out and chemical adhesion of fiberglass, carbon and aramid fibers.

Typical applications include aircraft, boats, auto body, structural components and parts.

Hardeners EH725 and EH750 are the standard production hardeners for fabricating composite parts. EH750 has been developed to provide a longer working time for larger and/or more complicated laminates when needed. EH725 is a faster setting hardener that can be used for patching, repairs and smaller laminates.

These products contain no toxic organic compounds or heavy metals. They surpass Southern California Air Quality standards and are soon to be Green Seal Certified. Both components are waterproof for high humidity environments.

Product Specifications						
	ER500	ESFR200	EH725	EH750	ESFH325	ASTM/Method
Color	Clear	Clear	Amber	Gardner	Amber	Visual
Viscosity @77° F	647	632	770	505	750	D2932
Specific Gravity gms/cc	1.12	1.12	.96	.96	.96	D1475
Mix Ratio by Unit		2:1	4:1	2:1	2:1	EcoPoxy Systems
Pot Life 4fl. oz Mass @77° F			15-20 Minutes	2.5-3.5 Hours	2 – 3 Minutes	D2471

Handling and Curing

EH725 and EH750 are the hardeners typically used to fabricate high performance composite parts. EH750 has a 20 minute working time and can be used for all sizes of parts using the contact lay-up method of fabrication. If the vacuum bagging technique is being used, EH750 should only be used for smaller parts. Hardener EH725 has a longer working time that is useful for vacuum bagging larger parts before the resin has gelled. Both of these hardeners will cure completely at room temperature (77°F or



above). When constructing 2-3ply, thin laminates for overnight demolding and sandability a room temperature of 77°F or above is required.

In thicker laminates and larger masses with these hardeners, plan to allow the laminate to cure at least 12 hours, at a minimum of 75°F, before moving the structure.

Hardeners EH725 and EH750 will cure completely at room temperature, and does not require a heat cure. It is intended for fast repairs or additions to a primary structure, and for parts that will be exposed to lower service temperatures. All primary structures should be fabricated with EH725 to take advantage of its longer work life and better service temperature capabilities.

Typical Mechanical Properties			
	ER500 / EH725	ER500/EH750	ASTM Method
Mix Ratio	4:1	2:1	EcoPoxy Systems
Pot Life@77°F	15 - 20 min	2.5 - 3.5 hours	D2471
Color	Yellow	Yellow	Visual
Mixed Viscosity @74°Fcps	595	502	D2556
Shore D Hardeners	82.2	81.8	D2240
Density kg/m³	955.8	915.0	D792
Specific Gravity	0.958	0.917	D792
Tensile Strength PSI	9692	9878	D638
Elongation Break %	3.65%	3.67%	D638
Tensile Modulus PSI	0.3934	0.3942	D638
Flexural Strength PSI	14434	14672	D790
Flexural Modulus PSI	0.4398	0.4403	D790
Glass Transition Temp TG	178.8°F	181°F	IS011357-2 DSC
Thermal Coefficient of Expansion. Range 0 degrees C. to 50 Degrees C	5.74x10 ⁻⁵	2.61x10 ⁻⁵	D676

Packaging Weights		
	Gallons	Drums
ER500	9.1 LBS	500 LBS
ESFR200	9.1 LBS	500 LBS
EH725	8.9 LBS	440 LBS
EH750	8.9 LBS	440 LBS
ESFH325	8.9 LBS	440 LBS

Safety and Handling

EcoPoxy contains no toxic organic compounds and heavy metals and therefore offer the user high performance products with minimum hazard potential when properly used. EcoPoxy resins and hardeners will present no handling problems if users exercise care to protect the skin and eyes and adequate ventilation is provided in work areas. However, all epoxy resins and hardeners can be irritating to the skin and prolonged contact may result in sensitization; and inhalation of mist vapors may cause allergenic respiratory reaction, especially in highly sensitive individuals. As such, avoid contact 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 a final wash with soap and water. The vinegar will neutralize the hardener and lessen the chances of long term effects.

Use goggles, a face-shield or safety glasses and 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.

EcoPoxy Set Fast Resin with Hardener Technical Data		
	ESFR200 WITH ESFR325	ASTM
Mix Ratio	2:1	EcoPoxy Systems
Pot Life @ 77 Degrees F	2.5 – 3 minutes	D2471
Color	Yellow	Visual
Mixed Viscosity @ 77 Degrees F, CPS	691	D2556



Shore D Hardness		D2240
Rockwell Hardness		D785
Density Kg/m3	865.9	D792
Specific Gravity	0.868	D792
Tensile Strength PSI		D638
Elongation at Break %		D638
Tensile Modulus PSI		D638
Flexural Strength PSI	12,576	D790
Compressive Strength PSI	0.6554	D695
Impact	3.45	D256
HDT		D648

Typical Mechanical Properties			
	ER500 with EH725	ER500 with EH750	ASTM
Mix Ratio	4:1	2:1	Ecopoxy Systems
Water Absorption	0.24%	0.26%	D570
Flammability Burning Rate (mm/min)	33.5	28.1	D635
Smoke & Flame	Burn Number 1		E84
Rockwell Hardness	122.4	114.3	D785
Impact	3.39	3.95	D256
Shear	5860		B5379-05
Insulation Resistance	9.05-10 /14		D257
Thermal Expansion			E831
Thermal Conductivity	BTU. IN/HR. FT2. F-D HR.FT 2 – BTU 0.34		C177
Thermal Shock Resistance	No Visual Defects	No Visual Defects	C484
Compressive Strength			D695
Dielectric Strength v/mil Average SD KV/MM Average SD	227.75 11.76 8.79 0.46		D149
Dielectric Constant	3.79		D150