

Aerialite®

Epoxy System

The **Aerialite® Epoxy System (AES)** is a 2 part, 100% solids, epoxy based resin and modified cycloaliphatic amine hardener system designed for the production of fiberglass reinforced marine composites (ok, surfboards really but marine composites makes it sound very techie). It has been designed with wet lay-up hand laminations in mind and has an excellent balance of low viscosity for rapid wet out and good air release; quick thin film set time to eliminate drain out; non-blushing, no shrinkage cure even in low temperature and high humidity; self leveling with high gloss; excellent UV stability; and high strength. In addition, it has been engineered to have a lower peak exotherm temperature than most fast setting epoxies, which aids in fin box installations without foam core melting. The system can be used with either the FAST or SLOW hardener or a mixture of the FAST and SLOW to create intermediate cure times (see page 2). The AES is designed for a complete cure at room temperature, but can be post cured at elevated temperature to increase its physical properties.

PACKAGING AND STORAGE

The **Aerialite Epoxy System A/B** is available in gallon, 5 gallon, 22 gallon and 55 gallon kits. Store in a cool, dry place in tightly sealed containers. DO NOT store above 100°F for prolonged periods. DO NOT leave hardener exposed to air for prolonged periods. Under these conditions, shelf life is at least 12 months.

SAFETY NOTE

This product is for industrial use only. Please review all precautions before using this product. As with all products of the same nature, avoid prolonged inhalation and repeated skin contact. Always wear safety goggles and impervious rubber gloves when handling this material. Refer to the MSDS for complete handling precautions.

PHYSICAL PROPERTIES with Fast Hardener

Density (mixed)	1.11 g/ml
Form and Color	Clear Liquid
Viscosity (mixed)	700-800 cPs@77°F
Mix Ratio by volume	100 parts A/50 parts B
Mix Ratio by weight	100 parts A/44 parts B
Pot Life (100 gm)	15-25 Minutes @ 77°F
Peak Exotherm 160°C	(100 gram mass)
Thin Film Set Time	2.5 Hours @ 77°F
Full Cure Time	72 Hours @ 77°F or 8 hours @ room temperature plus 2 hours at 212°F

MECHANICAL PROPERTIES

Hardness, Shore D	85
Heat Deflection Temperature	126°F
Flex Strength, psi	14,850
Flex Modulus, psi×105	4.84
Tensile Strength, psi	9,420
Tensile Modulus, psi×105	4.62
Percent Elongation at Break	4.2
Compressive Strength, psi	12,890
Compressive Modulus, psi×105	3.4
Izod impact ft. lb/in notch	0.58

IMPORTANT NOTICE

The information cited herein is based on data available to us and believed to be accurate at the time of publication. Data and parameters cited were obtained using materials under controlled conditions. This type of data should not be used for specification for fabrication and design. It is the user's responsibility to determine this product's fitness for use. Aerialite warrants that this product will only meet the cited parameters within the established conditions. There is no warranty of merchantability, fitness of use, nor any other express implied warranty. The user's exclusive remedy and the manufacturer's liability are limited to refund of the purchase price or replacement of the product. Aerialite will not be liable for incidental or consequential damages or injuries of any kind. The user should thoroughly test any proposed use of this product and independently conclude satisfactory performance in the application. Determination of the suitability of any kind of information or product for the use contemplated by the user, the manner of use and whether there is any infringement of patent is the sole responsibility of the user.

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The charts below are guidelines to mixing the Fast and Slow Hardener to achieve different curing times with the Aerialite Epoxy System. The Fast and Slow hardeners can be mixed together in any proportion to create intermediate curing speeds. The mix ratio of the combined Fast/Slow hardeners with Aerialite Epoxy Resin will remain 100 parts resin to 44 parts hardener by weight or 100 parts resin to 50 parts hardener by volume. We highly recommend that the Slow hardener NOT be used by itself for laminations. The set time is so slow that significant drainage off the rails will occur.

Grams				@ 75°F		
Resin	Fast Hardener	Slow Hardener	Fast/slow	Gel time (mins)	Thin Film set (hrs)	Exotherm (°C)
100	44.0	0.0	100% fast	20	2.5	155
100	33.0	11.0	3 parts to 1 part	30	3.0	155
100	22.0	22.0	1 parts to 1 part	45	4.0	120
100	11.0	33.0	1 parts to 3 part	80	6.5	75
100	0.0	44.0	100% slow	160	12.0	45

Milliliters				@ 75°F		
Resin	Fast Hardener	Slow Hardener	Fast/slow	Gel time (mins)	Thin Film set (hrs)	Exotherm (°C)
100	50.0	0.0	100% fast	20	2.5	155
100	37.5	12.5	3 parts to 1 part	30	3.0	155
100	25.0	25.0	1 parts to 1 part	45	4.0	120
100	12.5	37.5	1 parts to 3 part	80	6.5	75
100	0.0	50.0	100% slow	160	12.0	45