



EL-337 EPOXY LAMINATING SYSTEM

PRODUCT BULLETIN



HIGH TEMP, FILLED

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DESCRIPTION

EL-337 is an improved, health-safe, two component, filled, non-staining, high temp epoxy laminating system specifically developed for room temp hardening (B Stage) with high temp properties for high temp tooling applications. EL-337 has excellent handling properties and fabric wet-out to produce a void free tool with high dimensional stability. EL-337 can be used in the construction of large or small tools, as well as production parts. EL-337 can also be used with ADTECH High Temp Surface Coats ES-219 and ES-229. Tools made with EL-337 can be used at continuous temperature of 160°C/320°F, and intermittent temperatures up to 191°C/375°F. While EL-337 will gel at room temp, it must be post-cured to achieve ultimate strength. The system contains no MDA or VCHD. **Typical applications include: vacuum form molds, prototype injection molds, high temp bonding fixtures, spray metal molds, compression molds, high temp laminated molds and parts to be used in high temp applications.**

HANDLING CHARACTERISTICS @ 25°C/77°F

Mix Ratio (parts by weight)	100R/16H
Mix Ratio (parts by volume)	4.86R/1H
Mixed Density	10.93 lbs/gal
.....	0.046 lbs/cu in
Specific Gravity	1.263 grams/cc
Mixed Viscosity	3000-5000 cps
Work Life (232 gram mass)	45-60 minutes
Demold Time	16-24 hours
Complete Cure	3-5 days
Resin Color	Grey
Hardener Color	Amber
Mixed Color	Grey
Shelf Life Resin & Hardener (in original unopened containers)	2 years

PHYSICAL PROPERTIES

6 Layer, 10 Ounce Glass Fabric Laminate:

Ultimate Tensile Strength	27,285 psi
Ultimate Flexural Strength	39,035 psi
Flexural Modulus	1.3 x 10 ⁶ psi

Cast Bar:

Ultimate Compressive Strength	14,930 psi
Izod Impact Strength (notched)	5.29 in lbs
Hardness	88 Shore D
Shrinkage	0.00132
Coefficient of Thermal Expansion	2.38 x 10 ⁻⁵ in/in/°F
Tensile Elongation	1.574%
Glass Transition Temperature (Tg by DMA)	114.5°C/238°F

Tested @ 149°C/300°F (ASTM D-790):

Ultimate Flexural Strength	8,491 psi
Flexural Modulus	0.82 x 10 ⁶ psi

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POST CURE SCHEDULE

PRELIMINARY CURE SCHEDULE

On model: Cure for 24 hours @ 25°C/77°F
+ 2 hours @ 66°C/150°F

You may attach support structure and demold tool after this schedule is completed.

POST CURE SCHEDULE

After completing the Preliminary Cure Schedule, complete the following:

2 hours @ 93°C/200°F
2 hours @ 121°C/250°F
3 hours @ 149°C/300°F

Install thermocouples to monitor the mold temperature throughout the post cure process.

HEATING AND COOLING RATES DURING POST CURE

Always allow tools made with ADTECH high temp systems to gel at room temperature before subjecting them to post cure (24 hours is usually sufficient). This will prevent excessive exotherm and shrinkage from occurring.

When oven curing laminated molds, always place the mold in a room temperature oven increasing the temperature at a rate of no more than 13°C/25°F per hour. When finished, allow molds to remain in the heated oven, decreasing the temperature at a rate of no more than 27°C/50°F per hour. Never remove the mold from the oven until temperature has been lowered to less than 38°C/100°F.

Once a mold has been heat cured and conditioned, during the production curing cycles of composite parts you can revert to the heating/cooling rates prescribed for the production pre-preg or two component resin.