



EL-316 HIGH TEMPERATURE VACUUM INFUSION TOOLING SYSTEM

PRODUCT BULLETIN



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DESCRIPTION

EL-316 is a high temperature vacuum infusion tooling resin for continuous use to 204°C/400°F. Its long work life and low mixed viscosity of 640 cps is ideal for vacuum infusion molding of large or small high temperature composite tools. EL-316 exhibits excellent room temperature curing and toughening characteristics for off-model post curing of tooling laminate following a 48-72 hour room temperature cure. EL-316 eliminates the need to use high temperature models for generating high temperature composite production tools.

HANDLING CHARACTERISTICS @ 25°C/77°F

Mix Ratio (parts by weight).....	100R/35H
Mixed Density.....	1.10 grams/cc
.....	9.18 lbs/gal
Mixed Viscosity	640 cps
Work Life (270 gram mass).....	472 minutes
Mixed Color	Black
Shelf Life (in original unopened containers).....	1 year

PHYSICAL PROPERTIES OF 6 PLY LAMINATE @ 25°C/77°F (Tested Following Complete Post Cure Schedule)

Tensile Strength	24,100 psi
Tensile Elongation.....	1.5%
Flexural Strength.....	29,200 psi
Flexural Modulus.....	619,100 psi
Compressive Strength.....	12,590 psi
Heat Deflection Temperature @ 264 psi [neat resin only]	376°F/191°C
Coefficient of Linear Thermal Expansion	11.1 x 10 ⁻⁶ in/in/°C
Impact Strength.....	3.40 in-lbf/in
Cured Hardness	94 Shore D

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POST CURE SCHEDULE

PRELIMINARY CURE SCHEDULE

On Model Cure for 48 - 72 hours @ 25°C/77°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:

- 1 hour @ 49°C/120°F
- 2 hours @ 66°C/150°F
- 2 hours @ 94°C/200°F
- 2 hours @ 121°C/250°F
- 2 hours @ 149°C/300°F
- 2 hours @ 177°C/350°F
- 2 hours @ 204°C /400°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 (24-48 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.

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Supercedes E08-094 2/14/07



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