



**EL-319 SERIES  
EPOXY LAMINATING  
SYSTEM  
FLAME RETARDANT**



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**DESCRIPTION**

EL-319 is a UV stabilized Halogen-Free Flame Retardant Epoxy Laminating System developed for use in fabricating parts or repairs on structures which require flame retardant, self-extinguishing properties with room-temperature curing capabilities. EL-319 resin is available with two hardener choices: EL-319 moderate work-life hardener for fast turnaround of production parts and repairs, or EL-319-1 long work-life hardener for laminating and vacuum bagging of large parts and repairs. The EL-319-1 low 900 cps mixed viscosity is also suitable for vacuum infusion processes.

**\*\*EL-319 Resin does not contain PBDE or OBDE or DBDE flame retardant additives\*\***

**TYPICAL HANDLING CHARACTERISTICS @ 77°F (25°C)**

	<b><u>EL-319</u></b>	<b><u>EL-319-1</u></b>
Mix Ratio (parts by weight).....	100R/12H.....	100R/19H
Mixed Density.....	1.14 g/cc.....	1.13 g/cc
Mixed Viscosity.....	1,780 cps.....	900 cps
Work Life (200 gram mass).....	36 minutes.....	108 minutes
Complete Cure.....	7 days @ Room Temperature	
Accelerated Cure Schedule.....	24 hours at Room Temperature + 4 hours at 212F/100C	
Mixed Color.....	Unfilled Light Amber.....	Unfilled Light Amber
Shelf Life Resin & Hardener (in original unopened containers).....	2 years.....	2 years

**TYPICAL PHYSICAL PROPERTIES (Tested Following 7 Day Cure @ 77°F (25°C))**

Tensile Strength (6 ply laminate).....	26,820psi (185MPa).....	24,330psi (168MPa)
Tensile Elongation (cast bar).....	2%.....	2%
Flexural Strength (6 ply laminate).....	30,310psi (209MPa).....	24,030psi (166MPa)
Flexural Modulus (6 ply laminate).....	1,988,000psi (13,707MPa).....	1,758,000psi (12,121MPa)
Compressive Strength (cast bar).....	17,900psi (123MPa).....	16,080psi (111MPa)
Shrinkage.....	0.0015.....	0.0015
Cured Hardness (cast bar).....	85 Shore D.....	85 Shore D
Impact Strength (cast bar).....	4.4 in-lbf/in.....	5.57 in-lbf/in
Heat Deflection Temperature @ 66 psi (cast bar).....	125°F (52°C).....	113°F (45°C)
Heat Deflection Temperature @ 264 psi (cast bar).....	120°F (49°C).....	110°F (43°C)
Heat Deflection Temp @ 66 psi (cast bar +4 hrs @ 212°F(100°C)).....	195°F (90°C).....	153°F (67°C)
Moisture absorption (neat resin casting immersed 7 days/distilled water).....	+3.6% weight change	

**FAR/JAR 25.853 Appendix F, Part I(a)(1)(i), (ii), (v) (4 ply 7500 Style E-Glass Laminate)**

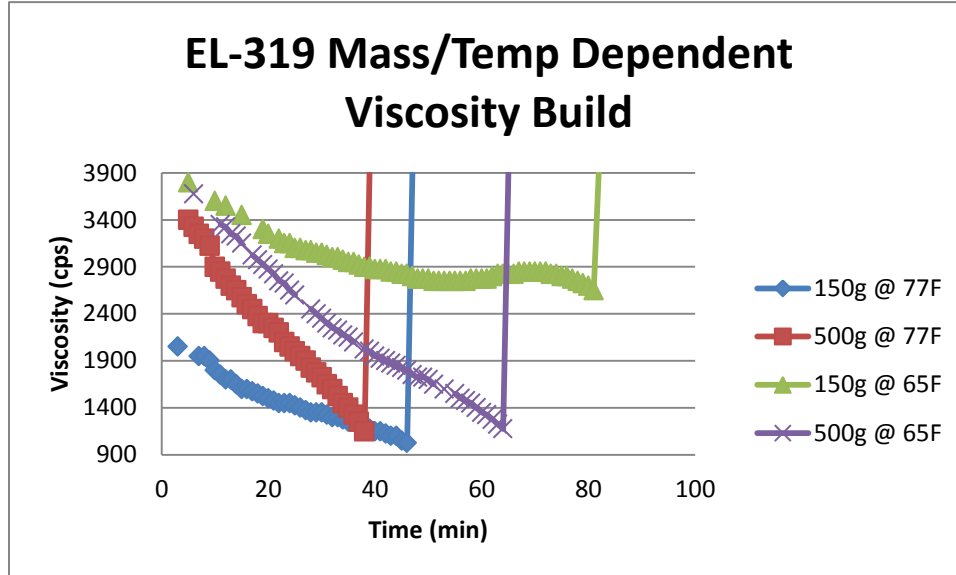
(F1) 60 second – Vertical Burn Test.....	PASS.....	PASS
(F2) 12 second – Vertical Burn Test Requirement (ref: EL-320).		
(F5) 30 second – 45° Angle Burn Test.....	PASS.....	PASS

**Please note:**

EL-319 resin may separate in storage, please mix thoroughly before use.

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This graph shows the relationship between starting temperature, mass and gel time as a guide for project planning for EL-319 Resin with EL-319 Hardener.



EL-319 Series/Revised 4/18/16  
Supersedes 12/30/14

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