



LAMINATING
EPOXY

ADHESIVES

PROCESS
EQUIPMENT

Technical Data

145 Resin/M2010 Hardener

Laminating Epoxy

The 145/M2010 Epoxy system is formulated for laminating synthetic composite structures. Use 145/M2010 for primary laminating applications. This combination resists drain out on vertical and overhead surfaces and is well suited for use in an impregnating machine. The 145/M2010 mixture will provide a working time of approximately 225 minutes at 72° F. A typical laminate will be gelled in approximately 7-10 hours at 72° F.

MIXING

Combine PRO-SET 145 Resin with PRO-SET M2010 Hardener following the ratios by weight or volume shown in the table. Stir thoroughly and transfer to impregnator, roller pan, or apply direct to the fabric.

CURING

PRO-SET 145/M2010 mixtures maintain excellent working properties until gel takes place, and at room temperature, will cure to a brittle B-stage. An elevated temperature cure or post-cure of 140°F to 250° F **is required** for mixture to reach final cure.

We recommend building sample panels using proposed materials and procedures to understand working and curing characteristics under your shop conditions.

HANDLING CHARACTERISTICS *(Not for specification purposes)*

Property	Mixed Resin/Hardener	
Density	9.3 lb/gal	
Viscosity @ 72°F (ASTM D-2393)	1,800 cps	
Viscosity @ 100°F	400 cps	
Mix Ratio (145 Resin:M2010 Hardener)	Target	Acceptable Range
by weight	100:28.5	100:29.1 to 100:27.9
by volume	100:34.3	100:35.0 to 100:33.6
Pot Life (ASTM D-2471)	100g	500g
@72°F	135 min	122
@100°F	30 min	23

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LAMINATING EPOXY – PHYSICAL PROPERTIES

145 Resin/M2010 Hardener

Physical Property	Test Method	Cure Schedule			
		RT x 15 hr + 140°F x 8 hr	RT x 15 hr + 180°F x 8 hr	250°F x 10 min.	350°F x 4 min.
Hardness (Shore D)	ASTM D-2240	86	87	87	87
Compression Yield (psi)	ASTM D-695	16,176	15,776	15,162	15,081
Tensile Strength (psi)	ASTM D-638	11,694	11,668	11,559	10,688
Tensile Elongation (%)	ASTM D-638	4.3	5.9	8.7	7.7
Tensile Modulus (psi)	ASTM D-638	4.63E+05	4.33E+05	4.05E+05	3.77E+05
Flexural Strength (psi)	ASTM D-790	21,362	19,458	19,863	18,081
Flexural Modulus (psi)	ASTM D-790	4.90E+05	4.48E+05	4.31E+05	3.99E+05
Heat Deflection Temperature (HDT) (°F)	ASTM D-648	177	213	229	230
Onset of Tg by DSC (°F) **		185	225	237	254
Ultimate Tg by DSC (°F) **		265	265	265	265
Izod Impact, notched (Ft-lb/in)	ASTM D-256	0.754	0.675	0.842	0.751

** Determined using a Differential Scanning Calorimeter (DSC).

Value reported is the onset of the glass transition

Test Specimens were neat epoxy (without fiber reinforcement)

Typical Values; not to be construed as specification

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