PRO-SET®

Technical Data

HTP-182
HTP-286

HIGH TEMPERATURE LAMINATING EPOXY

The New Standard

EPOXIES for
Laminating
Infusion
Tooling
Assembly

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ISO9001:2015 Certified

REV 4 / Nov 2019

COMBINED FEATURES

High-temperature, high-performance epoxy formulation for synthetic composite parts and tooling manufacture.

Tg as high as 150°C with proper post cure. Provides excellent temperature stability and great part cosmetics.

Slow cure speed hardener provides 4 to 5 hours of working time at 22°C. A typical laminate will gel in 8 to 10 hours at room temperature.

Medium viscosity for wet out of sythetic composite fabrics.

Elevated temperature cure is required. Parts can be pulled after 24-48 hours at room temperature or sooner after a mild initial cure of 30-40°C. See chart for post cure information.

HANDLING PROPERTIES

Property	Standard	Units	22°C
150g Pot Life	ASTM D2471	minutes	100
500g Pot Life	ASTM D2471	minutes	75
Viscosity Mixed	ASTM D2196	mPas	3000
Viscosity (resin)	ASTM D2196	mPas	8200
Viscosity (hardener)	ASTM D2196	mPas	180

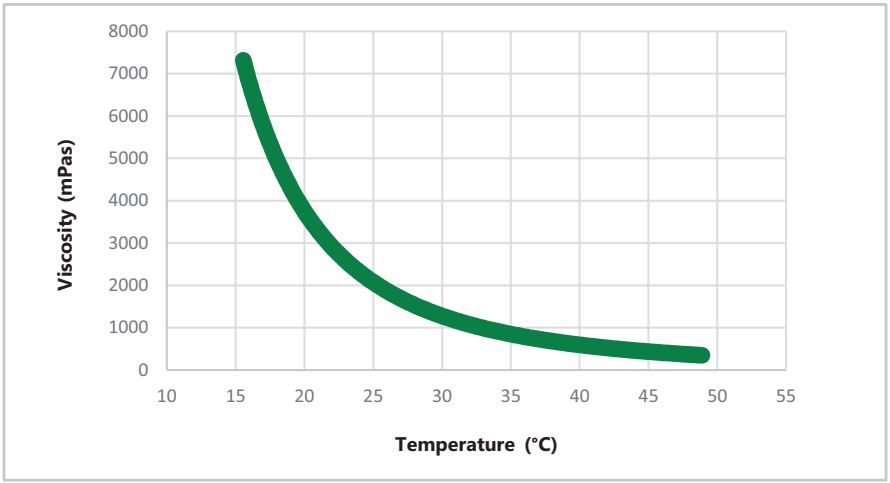
MIX RATIO

Method	Resin:Hardener	Resin:Hardener
Weight	4.70:1	100:20.9
Volume	4.00:1	100:25.0

DENSITY

State	Units	22°C
Cured	gcm^{-3}	1.16
Resin	gcm^{-3}	1.17
Hardener	gcm^{-3}	0.98

VISCOSITY VS TEMPERATURE



Test specimens were neat epoxy (without fibre reinforcement).
Typical values not to be construed as specification.

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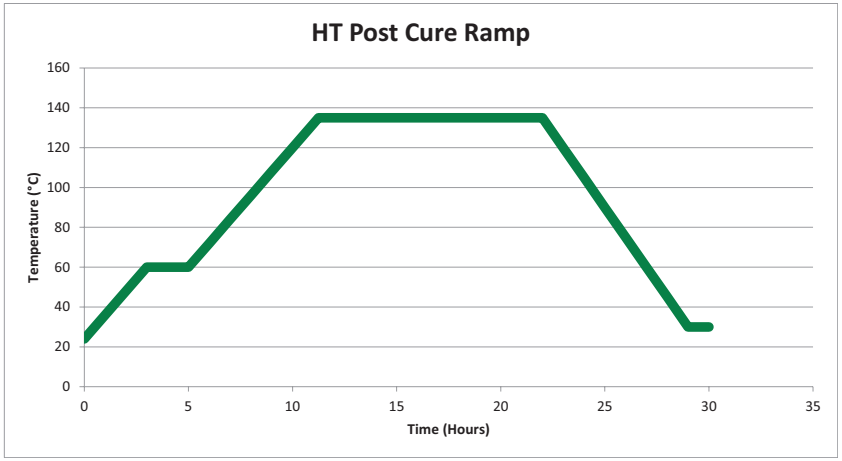
MECHANICAL PROPERTIES

Property	Standard	Units	RT Gelation + (60°Cx 2 hr) + (135°C x 12hr)	
Hardness	ASTM D2240	Shore D	94	
Compression Yield	ASTM D695	MPa	104	
Tensile Strength	ASTM D638	MPa	62	
Tensile Modulus	ASTM D638	GPa	2.82	
Tensile Elongation	ASTM D638	%	3.8	
Flexural Strength	ASTM D790	MPa	111	
Flexural Modulus	ASTM D790	GPa	2.76	
Coefficient of Thermal Expansion	ASTM E831	µm/(m*°C)	53.68	-30°C - 30°C
			81.00	30°C - 120°C

THERMAL PROPERTIES

Property	Standard	Units	RT Gelation + (60°Cx 2 hr) + (135°C x 12hr)
Tg DMA Peak Tan Delta	ASTM E1640*[1]	°C	165
Tg DMA Onset Storage Modulus	ASTM E1640*[1]	°C	152
Tg DSC Onset - 1st Heat	ASTM E1356	°C	153
Heat Deflection Temperature	ASTM E1356	°C	143

POST CURE SCHEDULE



Post cure 60°C x 2 hr + 135°C x 12 hr with ramp rates no greater than 12°C/hr, to achieve maximum properties. For larger parts, additional dwells may be required.

*[1] 1Hz, 3°C per minute.
Test specimens were neat epoxy (without fibre reinforcement).
These are typical properties and cannot be construed as a specification. The end users should test the products to ensure the products are suitable for the intended application. Any information, data, advice or recommendation published by Wessex Resins or obtained from Wessex Resins by other means and whether relating to Wessex Resins' materials or other materials, is given in good faith and believed to be reliable.

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