



Technical Data Sheet

Freeman 4105 Epoxy Hi-Temp Laminating Resin

Description

Freeman 4105 is a low viscosity unfilled hi-temp laminating system that offers excellent wet out for tooling applications requiring service temperature up to 350°F.

Physical Properties

Color	Amber
Mix Ratio (by weight)	100:14
Mix Ratio (by volume)	6:1
Viscosity, Mixed (cps)	1,800
Gel Time (minutes @ 77°F)	30
Demold Time (hours)	24
Hardness (Shore D)	88
Specific Gravity (g/cc)	1.15
Volumetric Yield (in ³ /lb)	24.0
Tensile Strength (psi)	12,400
Tensile Modulus (psi)	460,000
Flexural Strength, (psi)	16,600
Flexural Modulus (psi)	470,000
Compression Strength (psi)	21,600
Izod Impact, Notched (ft. lb./in.)	1.23
Heat Distortion Temperature	355°F
CTE (in/in/F°)	2.65 x 10 ⁻⁵
Shrinkage (in/in)	0.002"

POST CURE OPTIONS:

Post cure is recommended to obtain maximum physical and thermal properties of the system. The recommended post cure temperature ramp rate between stages is up 5°F per minute for heating, and down 1-2°F per minute for cooling. Heating and cooling ramp rates can vary based on size and thickness of the part. For larger or thicker parts use a more conservative ramp.

Post Cure	24 Hours at 77°F (25°C)	2 Hours at 150°F (66°C)	4 Hours at 150°F (66°C)	1 Hour at 200°F (93°C)	1 Hour at 250°F	1 Hour at 300°F	1 Hour at 350°F
Option 1	Supported	Supported		Supported	Supported	Supported	Supported
Option 2	Supported		Supported	Unsupported	Unsupported	Unsupported	Unsupported

The user shall determine the suitability of this product for their application and assumes all risks and liabilities associated with the use of this product. The exclusive remedy for all proven claims is replacement of our materials only and in no event shall Freeman Mfg. & Supply Co. be liable for special, incidental, or consequential claims.

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