



Freeman 850/51 Aluminum-Filled Epoxy Casting Resin

Description

Freeman 850/51 is an aluminum-filled epoxy that gels at room temperature but requires a heated post cure to obtain maximum properties and heat resistance. This system is well suited for constructing vacuum form tools, prototype injection molds, compression molds, prepreg molds, and other high temperature tooling. It is castable up to 4" in thickness and machines well.

Physical Properties

Color	Grey
Mix Ratio (by weight)	100:7
Viscosity, Mixed (cps)	18,000
Gel Time (minutes @ 77°F)	200
Demold Time (hours)	24
Hardness (Shore D)	89
Specific Gravity (in ³ /lb.)	1.63
Volumetric Yield (cu. in./ lb.)	16.9
HDT, Post Cure (°F)	355
Tensile strength (psi)	6,600
Compressive Strength (psi)	36,300
Flexural Strength (psi)	11,200
C.T.E. (in/in/°F)	2.11 x 10 ⁻⁵
Linear Shrinkage in/in	0.002"

SYSTEM POST CURE OPTIONS: Post cure the part to obtain maximum physical and thermal properties of the system. Select one of the following cure schedules depending on the desired physical properties of the final part. 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 (121°C)	1 Hour at 300°F (149°C)	1 Hour at 350°F (177°C)
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.