

Technical Data Sheet

Secondary Insulation

Sterling[®] E 163 Thixo

Single-Component Epoxy VPI Resin

Sterling® E 163 Thixo

Product Description

Sterling® E 163 Thixo is a single-component, heat-cured, epoxy impregnating resin.

Areas of Application

Specifically designed for simultaneous impregnation and encapsulation of stator slots and end windings

Features and Benefits

- Excellent thermal shock resistance
- Moisture and chemical resistant
- No catalyst required
- Thixotropic for minimal run-off
- Excellent penetration in VPI process

Application Methods

- Vacuum-Pressure Impregnation

Transportation / Storage

Store below 25°C / 77°F in a dry controlled environment out of direct sunlight. This material should be suitable for use stored under these conditions in the original sealed containers for three (3) months from the date of shipment.

Usable life may be extended by refrigerated storage at 5°C / 41°C.

For best results, VPI storage tanks should have a replenishment rate of 10% or more per month and employ cooling systems to maintain the resin at 20°C / 68°F or below.

Health / Safety

Refer to the Material Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F – 2 rpm	16,000 – 22,000	cP
Viscosity	25°C / 77°F – 20 rpm	6,000 – 8,000	cP
Sunshine Gel Time	150°C / 302°F	10 – 20	minutes
Weight per Gallon	25°C / 77°F	10.1 – 10.5	pounds
Flash Point	ASTM D93	> 94 > 201	°C °F

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Curing Schedule

Preheat units, as necessary, to set tapes. Allow units to cool to 38 – 49°C / 100 – 120°F before immersion to promote good penetration while not overheating the resin.

For non-critical applications, cure the VPI-treated units 4 - 8 hours at 150°C / 302°F. For optimum properties a post-cure of 4 hours at 180°C / 356°F will increase the heat deflection temperature 5 - 10°C.

Cure cycle is based on time after unit reaches specified temperature

Typical Mechanical Properties

Specimens cured 4 hours at 150°C / 302°F

Property	Conditions	Value	Units
Film Build		8 – 12	Mils
Hardness	Shore D	74	
Heat Deflection Temp.		50	°C
Tensile Strength	25°C / 77°F	5200	Psi
Elongation	25°C / 77°F	11.5	%
Weight Loss	24 h @ 250°C / 482°F	3.1	%

Typical Electrical Properties

Specimens cured 4 hours at 150°C / 302°F

Property	Conditions	Value	Units
Dissipation Factor	60 Hz – 30°C / 86°F	.04	
	60 Hz – 60°C / 140°F	.46	
Dielectric Constant	60 Hz – 30°C / 86°F	4.5	
	60 Hz – 60°C / 140°F	7.6	
Volume Resistivity	30°C / 86°F	1.8 x 10 ¹²	ohm-cm
	60°C / 140°F	2.0 x 10 ¹⁰	ohm-cm

The above properties are typical values and are not intended for specification use.

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