

Technical Data Sheet

Electrical Insulation

Sterling[®] Y-210

Solvent-Borne Impregnating Resin

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Sterling® Y-210

Product Description

Sterling® Y-210 is a clear, solvent-borne, heat-cured impregnating resin.

Areas of Application

Impregnation of motor and transformers windings

Features and Benefits

- An industry standard for high temperature performance
- Low viscosity for excellent penetration
- Semi-flexible for noise suppression
- Excellent tank stability
- UL recognized insulation systems up to Class 220

Application Methods

- Dip-and-Bake
- Roll-through

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 twelve (12) months from the date of shipment.

Failure to store this product as recommended above may lead to deterioration in product performance.

Keep containers tightly sealed to minimize evaporation

Mix product thoroughly before use

Health / Safety

Refer to the Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	150 - 250	cP
Non-Volatile Content	0.5 g – 3 h – 110°C	46 - 50	%
Weight per Gallon	25°C / 77°F	7.8 – 8.1	pounds
Viscosity Reducer		ELAN-Plus™ BS-107 Reducer	
Flash Point	ASTM D93	33 91	°C °F

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Regulatory Information

Property	Test Method	Value	Units
Volatile Organic Content	ASTM D3960	4.0 ^[1]	pounds / gallon
RoHS Compliance	Sterling® Y-210 complies with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 (RoHS 2.0) as amended 31 March 2015 and Directive 2015/863 (RoHS 3.0).		

^[1] VOC test methods and limits vary widely by regulatory jurisdiction and product application. The value above was obtained by curing a thin film under specific laboratory conditions (0.5 grams - 1 hour - 110°C).

Application / Curing Schedule

See ELANTAS PDG Processing Guide *PG-113 – Dip Processing Solvent-Borne Impregnating Resins*.

Cure for 4 hours at 150°C / 302°F – or – 2 hours at 163°C / 325°F

The cure schedules above are based on time after the unit reaches the specified temperature and are recommendations only. The user is responsible for determining the optimum cure conditions for their application.

Typical Mechanical Properties

Property	Test Method	Conditions	Value	Units
Helical Coil Bond Strength over MW 35	ASTM D2519	25°C / 77°F	23	pounds
		100°C / 212°F	4	pounds
		150°C / 302°F	2	pounds

Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	1.2 mils – 25°C / 77°F	3400	volts/mil
Dielectric Strength	ASTM D149	1.2 mils – 25°C / 77°F After 24 hours in water	3100	volts/mil
Dissipation Factor	ASTM D150	1 kHz – 25°C / 77°F	0.04	
		1 kHz – 100°C / 212°F	0.04	
		1 kHz – 150°C / 257°F	0.03	
		1 kHz – 200°C / 392°F	0.28	
Volume Resistivity	ASTM D150	1 kHz – 25°C / 77°F	1.5 x 10 ¹⁶	ohm-cm
		1 kHz – 100°C / 212°F	8.2 x 10 ¹⁴	ohm-cm
		1 kHz – 150°C / 257°F	1.9 x 10 ¹⁰	ohm-cm
		1 kHz – 200°C / 392°F	6.9 x 10 ⁹	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	2.4 x 10 ¹⁴	ohms/sq.

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Underwriters Laboratories Recognition (ELANTAS File E75225)

Wire Construction	Helical Coil	Twisted Pair
NEMA MW5	Class 180	Class 180
NEMA MW16	Class 180	Class 240
NEMA MW28	Class 155	Class 155
NEMA MW35	Class 200	Class 200
NEMA MW76	Class 200	Class 180

UL Recognized Insulation Systems (ELANTAS File E87039)

Thermal Class	System
Class 130	PDG 12, 86-130-1, 86-130-2, 86-130-30, 86-130-4, 86-130-5, 87-130-2R, 87-130-4R, 87-130-6R, 87-130-7R, 87-130-9R, 90-130-12R, 90-130-4Z, 90-130-GV, 90-130-GEV
Class 155	86-155-1, 86-155-2, 86-155-3, 86-155-4, 86-155-5, 86-155-6, 87-155-2R, 87-155-5R, 90-155-3Z, 90-155-GEV
Class 180	PDG 14, 91-180-1, 86-180-1, 86-180-2, 86-180-3, 86-180-4, 86-180-5, 87-180-3R, 87-180-4R, 90-180-GEV, PDG 180 High Voltage
Class 200	89-220-1, 89-200-2, 89-200-3
Class 220	86-220-1, 86-220-2, PDG 220 High Voltage

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

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