

**Technical Data Sheet**

**Secondary Insulation**

**Sterling<sup>®</sup> Y-210**

**Solvent-Borne Impregnating Resin**

# 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 Material Safety Data Sheet.

## Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	150 - 250	cP
Non-Volatile Content	½ g – 3 h – 110°C	46 - 50	%
Weight per Gallon	25°C / 77°F	7.7 – 8.0	pounds
Density	25°C / 77°F	0.92 – 0.96	g / cm <sup>3</sup>
Viscosity Reducer		ELAN-Plus™ BS-107 Reducer	
Flash Point	ASTM D93	28 82	°C °F

## Sterling® Y-210

### Application / Curing Schedule

Preheat to 121 – 135°C / 250 - 275°F unit temperature for one hour.

Allow unit to cool to 60 – 77°C / 140 – 170°F;

Dip unit into resin for 10 – 15 minutes or until bubbling stops. Drain unit for 10 – 15 minutes

Cure for 4 hours at 150°C / 302°F – or – 2 hours at 175°C / 347°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 his application.

### Typical Mechanical Properties

Property	Conditions	Value	Units
Build		1.2	mils
Helical Coil Bond Strength ASTM D2519 over MW 35	25°C / 77°F	23	pounds
	100°C / 212°F	4	pounds
	150°C / 302°F	2	pounds

### Typical Electrical Properties

Property	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 <sup>16</sup>	ohm-cm
	1 kHz – 100°C / 212°F	8.2 x 10 <sup>14</sup>	ohm-cm
	1 kHz – 150°C / 257°F	1.9 x 10 <sup>10</sup>	ohm-cm
	1 kHz – 200°C / 392°F	6.9 x 10 <sup>9</sup>	ohm-cm
Surface Resistivity ASTM D257	25°C / 77°F	2.4 x 10 <sup>14</sup>	ohms/sq.

## Sterling® Y-210

### 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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