

**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	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	28 82	°C °F
Volatile Organic Content	ASTM D3960-92	4.0 <sup>[1]</sup>	pounds / gallon

<sup>[1]</sup> 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). Contact your ELANTAS PDG representative regarding alternate methods.

## Sterling® Y-210

### 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 his 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	$1.5 \times 10^{16}$	ohm-cm
		1 kHz – 100°C / 212°F	$8.2 \times 10^{14}$	ohm-cm
		1 kHz – 150°C / 257°F	$1.9 \times 10^{10}$	ohm-cm
		1 kHz – 200°C / 392°F	$6.9 \times 10^9$	ohm-cm
Surface Resistivity	ASTM D257	25°C / 77°F	$2.4 \times 10^{14}$	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.

ELANTAS PDG, Inc. warrants the chemical composition of its products within stated tolerances, but does not guarantee that a product will be appropriate for any particular application. Any recommendation, performance of tests or suggestion is offered merely as a guide and is not a substitute for a thorough evaluation by the user. No representative of ELANTAS PDG, Inc. has the authority to offer a warranty that a product will perform satisfactorily in manufacturing a product and no such representation should be relied upon.