

**Technical Data Sheet**

**Secondary Insulation**

**Isonel<sup>®</sup> 51**

**Solvent-Borne Impregnating Resin**

# Isonel<sup>®</sup> 51

### Product Description

Isonel<sup>®</sup> 51 is a single-component, solvent-borne, heat-cured impregnating resin.

### Areas of Application

Impregnation of motor and transformers windings

### Features and Benefits

- Superior heat resistance
- Low viscosity for excellent penetration
- Excellent tank stability
- Semi-flexible for vibration suppression in transformers
- 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 – 135°C	48 - 52	%
Weight per Gallon	25°C / 77°F	7.9 - 8.2	pounds
Viscosity Reducer		ELAN-Plus™ BS-107 Reducer	
Flash Point	ASTM D93	18 64	°C °F

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### 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 8 hours at 177°C / 350°F – or – 2 hours at 204°C / 400°F

Cure schedule is based on time after unit reaches specified temperature

### Typical Mechanical Properties

Property	Conditions	Value	Units
Build		2	mils
Helical Coil Bond Strength ASTM D2519 over MW 35	25°C / 77°F	22	pounds
	150°C / 302°F	2	pounds

### Typical Electrical Properties

Property	Conditions	Value	Units
Dielectric Strength ASTM D149	25°C / 77°F - 2 mils	4400	volts/mil
Dielectric Strength ASTM D149	25°C / 77°F - 2 mils After 24 hours in water	3500	volts/mil

### Underwriters Laboratories Recognition (ELANTAS File E75225)

Wire Construction	Helical Coil	Twisted Pair
NEMA MW16	Class 240	Class 220
NEMA MW30	Class 220	Class 200
NEMA MW35	Class 220	Class 200
NEMA MW76	Class 220	Class 180

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## UL Recognized Insulation Systems (ELANTAS File E87039)

Thermal Class	System
Class 130	B-2, B-3A, B-3B, B-4, 18-1
Class 155	14, 14-1, 20-1, F-1, MEGA II
Class 180	16-1A, HV-3, SCI H-1
Class 200	SCI N-1, MEGA IV
Class 220	10-1, 10-3, HV-1, HV-2, PDG 220-1, PDG 220 High Voltage, SCI R-1

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

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