

Technical Data Sheet

Secondary Insulation

Isonel[®] 31-398

Solvent-Borne Impregnating Resin

Isonel[®] 31-398

Product Description

Isonel[®] 31-398 is a single-component, solvent-borne, heat-cured impregnating resin.

Areas of Application

Impregnation of motor and transformer windings

Features and Benefits

- Specially formulated for use in abbreviated baking schedules
- Low viscosity for excellent penetration
- 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	275 - 375	cP
Non-Volatile Content	½ g – 3 h – 135°C	46.0 - 50.0	%
Weight per Gallon	25°C / 77°F	7.5 - 7.8	pounds
Viscosity Reducer		ELAN-Plus™ BS-107 Reducer	
Flash Point	ASTM D93	33 91	°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 2 hours at 150°C / 302°F – or – 1 hour at 163°C / 325°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	45	pounds
	150°C / 302°F	4	pounds

Typical Electrical Properties

Property	Conditions	Value	Units
Dielectric Strength ASTM D149	25°C / 77°F - 2 mils	4200	volts/mil
Dielectric Strength ASTM D149	25°C / 77°F - 2 mils After 24 hours in water	3100	volts/mil

Underwriters Laboratories Recognition (ELANTAS File E75225)

Wire Construction	Helical Coil	Twisted Pair
NEMA MW16	Class 180	Class 220
NEMA MW28	Class 155	Class 130
NEMA MW30	Class 200	Class 180
NEMA MW35	Class 200	Class 180
NEMA MW76	Class 180	Class 155

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UL Recognized Insulation Systems (ELANTAS File E87039)

Thermal Class	System
Class 130	B-1, B-2, B-3A, B-3B, B-4, 18-1, PDG 116
Class 155	14-1, 20-1, MEGA II, F-1, PDG 117
Class 180	16-1,16-1A, MEGA III, SCI H-1
Class 200	SCI N-1, MEGA IV
Class 220	10-1, PDG 220 High Voltage, PDG 220-1, SCI R-1

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

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