

Technical Data Sheet

Secondary Insulation

RanVar™ B535-5S

Water-Reducible Impregnating Resin

RanVar™ B535-5S

Product Description

Pedigree™ B535-5S is a single-component, water-reducible, heat-cured impregnating resin.

Areas of Application

Impregnation of motor and transformers windings

Features and Benefits

- Supplied as a concentrated resin solution - reducible with water to as low as 15% N.V.
- Fast cure at low baking temperatures
- UL recognized insulation systems up to Class 220

Application Method

- Dip-and-Bake

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 six (6) months from the date of shipment.

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

Mix product thoroughly before use.

Dip tank pH should be maintained between 8.0 and 9.0. See ELANTAS PDG technical bulletin *PG-100 Processing Guide for Waterborne Resins* for additional information.

Health / Safety

Refer to the Material Safety Data Sheet.

Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	7,000 - 15,000	cP
Non-Volatile Content	1½ g – 3 h – 135°C	68 – 72	%
Weight per Gallon	25°C / 77°F	8.9 - 9.3	pounds
Viscosity Reducer		Potable tap water	
pH Adjuster		ELAN-Plus™ BS-308 pH Adjuster	
Flash Point	ASTM D93	84 183	°C °F

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Adjustment with Water

RanVar™ B535-5S is intended to be reduced with water to a viscosity that allows for complete penetration of electrical windings while providing an adequate cured film build. This is typically achieved between 25 and 35% resin solids (N.V.).

Desired N.V.:	50%	40%	35%	30%	25%
Add Water (%):	40	75	100	133	180

Add ELAN-Plus™ BS-308 pH Adjuster, as necessary, to maintain pH between 8.0 and 9.0

Addition of ELAN-Plus™ BS-224 Reducer may be necessary periodically to stabilize dip tanks below 25% N.V. Contact your ELANTAS PDG representative for specific recommendations.

Application / Curing Schedule

Preheat to 121 – 135°C / 250 - 275°F unit temperature for one hour. (recommended, but not mandatory)

Allow unit to cool to 54 – 65°C / 130 – 150°F.

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

Cure for 3 hours at 135°C / 275°F – or –
2 hours at 150°C / 302°F

Cure schedule is based on time after unit reaches specified temperature.

Typical Mechanical Properties

Specimens cured 2 hours at 150°C / 302°F, double dip

Property	Conditions	Value	Units
Build		2.5	mils
Helical Coil Bond Strength ASTM D2519 over MW 35	25°C / 77°F	13	pounds pounds
	150°C / 302°F	2	

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Typical Electrical Properties

Property	Conditions	Value	Units
Dielectric Strength ASTM D149	2.5 mils – 25°C / 77°F	3700	volts/mil
Dielectric Strength ASTM D149	2.5 mils – 25°C / 77°F After 24 hours in water	3300	volts/mil

Underwriters Laboratories / UL 1446 Recognition (ELANTAS File E75225)

Wire Construction	Helical Coil	Twisted Pair
NEMA MW16	200	240
NEMA MW24	180	130
NEMA MW26	180	180
NEMA MW28	180	130
NEMA MW30	180	200
NEMA MW35	200	200
NEMA MW 74	200	200
NEMA MW76	180	180

UL Recognized Insulation Systems (ELANTAS File E87039)

Thermal Class	System
Class 130	MEGA I
Class 155	MEGA II
Class 180	MEGA III
Class 200	MEGA IV Table II
Class 220	MEGA V, PDG 220-1, WEHV-1, WEHV-II

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

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