

**Technical Data Sheet**

**Secondary Insulation**

**Pedigree<sup>®</sup> 50 VTC**

**Precatalyzed Polyester Impregnating Resin**

## Pedigree® 50 VTC

### Product Description

Pedigree® 50 VTC is a pre-catalyzed, 100%-reactive unsaturated polyester resin in vinyl toluene monomer.

### Areas of Application

Impregnation of small and large transformer windings

### Features and Benefits

- Excellent electrical properties
- Compatible with a wide variety of magnet wire constructions
- Semi-flexible for noise suppression
- Low viscosity for excellent penetration
- Can be modified with mineral fillers to improve heat dissipation
- UL recognized insulation systems up to Class 240
- Conforms to MIL-I-24092-B

### Application Methods

- Dip-and-Bake
- Vacuum Impregnation
- Vacuum-Pressure Impregnation

### 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.

Keep containers tightly sealed to minimize evaporation. Refrigeration is recommended for long term storage

Mix product thoroughly before use

See ELANTAS PDG Technical Bulletin *TI-4001 - Unsaturated Polyester Resin Maintenance* 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	150 – 250	cP
Weight per Gallon	25°C / 77°F	9.0 – 9.3	pounds
Viscosity Reducer		ELAN-Plus™ BS-217 Diluent	
Sunshine Gel Time	125°C / 257°F	10 – 15	minutes
Gel Time Adjuster		ELAN-Plus™ BS-6440 Inhibitor	

NOTE: Gel time may drift during shipment and storage. Refer to ELANTAS PDG Technical Bulletin *TI-4001 – Unsaturated Polyester Resin Maintenance* for adjustment instructions.

# Pedigree® 50 VTC

### Typical Properties of Material as Supplied (continued)

Flash Point	ASTM D93	53 127	°C °F
Volatile Organic Content	ASTM D6053-96	2.9 <sup>[2]</sup>	pounds/gallon

<sup>[2]</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 (2 grams - 1 hour - 150°C). Contact your ELANTAS PDG representative regarding alternate methods.

Pedigree® 50 VTC is a 100% reactive system. Total emissions are dependent on the method of application, air flow, processing temperatures and the type of unit being produced.

### Processing / Curing Schedule

See ELANTAS PDG Processing Guide *PG-109 – Vacuum Pressure Impregnating (VPI) Styrene Polyester Resins*.

Cure 1 hour at 163°C / 325°F – or – 3 hours at 149°C / 300°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

**Specimen cured 2 hours at 149°C / 300°F, single dip**

Property	Test Method	Conditions	Value	Units
Helical Coil Bond Strength over MW 35	ASTM D2519	25°C / 77°F	16	pounds
		150°C / 302°F	1	pounds
Hardness	ASTM D2240	Shore D	60 - 65	

### Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F – 1.5 mils	4000	volts/mil
Dielectric Strength	ASTM D149	25°C / 77°F – 1.5 mils After 24 hours in water	2800	volts/mil

**Pedigree® 50 VTC**

**UL Recognized Insulation Systems (ELANTAS File E87039)**

Thermal Class	System
Class 130	PDG 1, 2, 4A, 4B, 12, 100, 101, 111, 116
Class 155	PDG 3, 9, 117
Class 180	PDG H, H-1, 14, 103, 109, 180-High Voltage, Mega III
Class 200	PDG 7, 10, 104
Class 220	PDG 8, 15, 220 High Voltage
Class 240	PDG 16

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.