

**Technical Data Sheet**

**Secondary Insulation**

**ELAN-Safe<sup>®</sup> 21-0U01-75**

**Water-Borne Impregnating Resin**

## ELAN-Safe<sup>®</sup> 21-0U01-75

### Product Description

ELAN-Safe<sup>®</sup> 21-0U01-75 is a single-component, water-borne impregnating resin.

It is supplied as a high-solids solution, for reduction with water to the desired viscosity.

### Areas of Application

General-purpose impregnant for motor and transformer windings

### Features and Benefits

- Excellent tank stability
- Low viscosity for excellent penetration
- Contains UV tracer
- UL Recognized Insulation Systems up to Class 240
- Formulated without hazardous air pollutants <sup>[1]</sup>

<sup>[1]</sup> Contains no HAPs above reportable thresholds. See MSDS for complete information.

### Application Methods

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.

Dip tank pH should be maintained between 8.0 and 9.0. See ELANTAS PDG technical bulletin *TI-4004 Water-Based Resin Maintenance* for additional information.

Mix thoroughly before use

### Health / Safety

Refer to the Material Safety Data Sheet.

### Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Appearance		Translucent amber liquid	
Non-Volatiles	1.5 g - 3 h - 135°C	74 - 77	%
Viscosity	25°C / 77°F	7,000 - 20,000	cP
Viscosity Reducer		Potable Tap Water	
pH Adjuster		ELAN-Plus™ BS-308 pH Adjuster	
Weight per Gallon		9.2 - 9.6	pounds
Flash Point	ASTM D93	71 160 <sup>[2]</sup>	°C °F
VOC	ASTM D3960-92	1.7 <sup>[3]</sup>	lbs./gal.

<sup>[2]</sup> When reduced with water to 65% N.V. or below, flashpoint is above 93.3°C / 200°F

<sup>[3]</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 (0.3 grams - 1 hour - 110°C). Contact your ELANTAS PDG representative regarding alternate methods.

## ELAN-Safe<sup>®</sup> 21-0U01-75

### Processing / Curing Schedule

Reduce with water to desired viscosity. See Technical Bulletin *TI-4004 Water-Based Resin Maintenance* for guidance.

See ELANTAS PDG Processing Guide *PG-121 – Dip Processing Water-Borne Impregnating Resins*.

Cure for 4 hours at 135°C / 275°F – or – 2 hours at 150°C / 302°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

**Specimens double dipped - cured 2 hours at 150°C**

Property	Test Method	Conditions	Value	Units
Helical Coil Bond Strength over MW 35	ASTM D2519	25°C / 77°F	20	pounds
		150°C / 302°F	5	pounds

### Typical Electrical Properties

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F - 1.5 mils	3000	volts/mil
Dielectric Strength	ASTM D149	25°C / 77°F - 1.5 mils After 24 hours in water	2200	volts/mil
Dissipation Factor	ASTM D150	1 kHz – 25°C / 77°F	.01	
		1 kHz – 100°C / 212°F	.03	
		1 kHz – 150°C / 257°F	.05	
Dielectric Constant	ASTM D150	1 kHz – 25°C / 77°F	4.0	
		1 kHz – 100°C / 212°F	4.5	
		1 kHz – 150°C / 257°F	4.8	
Volume Resistivity	ASTM D150	25°C / 77°F	3.4 x 10 <sup>15</sup>	ohm-cm
		100°C / 212°F	1.5 x 10 <sup>12</sup>	ohm-cm
		150°C / 257°F	8.7 x 10 <sup>9</sup>	ohm-cm

**ELAN-Safe<sup>®</sup> 21-0U01-75**

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

Thermal Class	System
Class 130	PDG 1,2, 4A, 4B, 6, 12
Class 155	PDG 3, 9, 102, 108
Class 180	PDG H, H-1, 14, 103, 109, 180 High Voltage
Class 200	PDG 7, 104
Class 220	PDG 8, 15, 220, 220-1, 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.