ELANTAS
Electrical Insulation

Technical Data Sheet

Secondary Insulation

Ripley™ E 468-2-7FC-55F

Single-Component Epoxy VPI Resin

ELANTAS PDG, Inc.
5200 North Second Street
St. Louis, MO 63147
USA
Tel +1 314 621-5700
Fax +1 314 436-1030
info.elantas.pdg@altana.com
www.elantas.com

Ripley™ E 468-2-7FC-55F

Product Description

Ripley™ E 468-2-7FC-55F is a single-component, heat-cured, epoxy impregnating resin.

Areas of Application

The Ripley™ E 468 product line is the industry standard for impregnation of transformers of all sizes

Features and Benefits

- Mineral filled for improved heat dissipation
- Flexible for excellent noise suppression
- No separate catalyst required
- High flash point
- UL recognized insulation systems up to Class 240

Application Methods

- Vacuum-Pressure Impregnation
- Vacuum 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.

Usable life may be extended by refrigerated storage at 5°C / 41°F.

See ELANTAS PDG Technical Bulletin *TI-4002 - VPI Epoxy Resin Maintenance* for additional information.

Mix thoroughly before use.

For best results, VPI storage tanks should have a replenishment rate of 10% or more per month and employ cooling systems to maintain the resin at 20°C / 68°F or below.

This product is moisture-sensitive. Resin in storage vessels should be kept under vacuum or blanketed with dry air or inert gas.

Health / Safety

Refer to the Material Safety Data Sheet.

See ELANTAS PDG Technical Bulletin *TI-100 - Handling Precautions for Epoxy Resins* for additional information.

Typical Properties of Material as Supplied

Property	Conditions	Value	Units
Viscosity	25°C / 77°F	3,000 – 8,000	cP
Weight per Gallon	25°C / 77°F	12.8 – 13.2	pounds
Sunshine Gel Time	135°C / 275°F	10 – 20	minutes
Flash Point	ASTM D93	> 94 > 201	°C °F
Volatile Organic Content	ASTM D6053	0.5 [1]	pounds / gallon

[1] 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.

ELANTAS Electrical Insulation

Ripley™ E 468-2-7FC-55F

Processing / Curing Schedule

See ELANTAS PDG Processing Guides for Vacuum Pressure Impregnating (VPI) Epoxy Resins - *PG-104 (Wet Vacuum), PG-105 (Dry Vacuum)* and *PG-115 – Vacuum Impregnating (VI) Epoxy Resins for Transformers.*

NOTE: While preheating may be used to set tapes, remove moisture and stress-relieve magnet wire, units should be allowed to cool to room temperature before immersion to minimize bodying of the resin.

Cure impregnated units for 4 hours at 135°C / 275°F – or – 3 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 cured 4 hours at 135°C / 275°F

Property	Test Method	Conditions	Value	Units
Tensile Strength	ASTM D638	25°C / 77°F	2400	psi
Elongation	ASTM D638	25°C / 77°F	20	%
Shore Hardness	ASTM D2240	25°C / 77°F	D 70	
Glass Transition Temp. (T_g)	ASTM E831	TMA	48	°C
Coefficient of Thermal Expansion	ASTM E831	Below T_g Above T_g	60 140	ppm / °C ppm / °C

Typical Electrical Properties - Specimens cured 4 hours at 135°C / 275°F

Property	Test Method	Conditions	Value	Units
Dielectric Strength	ASTM D149	25°C / 77°F – 0.7 mils	2000	volts / mil
Dielectric Strength	ASTM D149	25°C / 77°F – 0.7 mils After 24 hours in water	1400	volts / mil
Dissipation Factor	ASTM D150	1 kHz – 25°C / 77°F 1 kHz – 100°C / 212°F 1 kHz – 150°C / 302°F 1 kHz – 200C / 392°F	0.01 0.03 0.02 0.13	
Dielectric Constant	ASTM D150	1 kHz – 25°C / 77°F 1 kHz – 100°C / 212°F 1 kHz – 150°C / 302°F 1 kHz – 200C / 392°F	3.4 3.7 4.1 4.0	
Volume Resistivity	ASTM D257	25°C / 77°F	7.0×10^{15}	ohm-cm

ELANTAS Electrical Insulation

Ripley™ E 468-2-7FC-55F

UL Recognized Insulation Systems (ELANTAS File E87039)

Thermal Class	System
Class 130	DASH 2: B-1, B-2, B-2Z, B-2Z-1, B-5, B-8, B-10, B-11, B-13, B-14, B-19, BR-1, BR-2, PDG 12, PDG 116
Class 155	DASH 2: F-1, F3, F4, F-4A, PDG 117
Class 180	DASH 2: H-1, H-2, H-3, H-4, H-5, H-8, HR-1, HR-2, HR-3, HR-4, PDG 14, PDG 180 High Voltage
Class 200	DASH 2: N-1, N-2, N-3, N-4, N-6, N-2HV, PDG 10, MEGA IV
Class 220	DASH 2: R-1, R-2, R-3, R-5, HV-1, HV-2, PDG 8, PDG 220-1, PDG 220 High Voltage, PDG 15
Class 240	DASH 2: S-1

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.

FOR INDUSTRIAL USE ONLY