ELANTAS
Electrical Insulation

Technical Data Sheet

Secondary Insulation

Epoxylite® E 477

Single-Component Epoxy VPI Resin

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Epoxylite® E 477

Product Description

Epoxylite® E 477 is a single-component, heat-cured, epoxy impregnating resin.

Areas of Application

Specifically designed for VPI processing of dry-taped, form wound coils:

Class 130 – 13.8 kV
Class 155 – 6.9 kV
Class 180 – 4.2 kV

Features and Benefits

- High adhesion and mechanical strength to provide protection against vibration, shock and severe mechanical abuse
- Excellent chemical resistance for operation in corrosive environments and occasional exposure to washdown and flooding
- No catalyst required
- Recommended for service up to Class 180

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.

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°C or below.

Mix 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	1000 – 2500	cP
Weight per Gallon	25°C / 77°F	9.4 – 9.7	pounds
Flash Point	ASTM D93	> 94 > 201	°C °F

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Curing Schedule

Preheat units, as necessary, to set tapes. Allow units to cool to 43 – 49°C / 110 – 120°F before immersion to promote good penetration while not overheating the resin.

Cure VPI-treated units for five hours at 160°C / 320°F (overnight is also acceptable). If multiple process cycles are used, cure only four hours at 160°C / 320°F for initial cycles with the last cycle receiving the full cure.

A cure temperature of 180°C / 356°F per the schedule above is required for 13.8 kV service.

Cure schedule is based on time after unit reaches specified temperature

Typical Mechanical Properties

Property	Conditions	Value	Units
Helical Coil Bond Strength	ASTM D2519 – 25°C / 77°F	56	Pounds
Hardness	Shore D – 25°C / 77°F	85 - 90	

Typical Electrical Properties

Property	Conditions	Value	Units
Dielectric Strength	ASTM D149 – 1.0 mils	2600	volts/mil
Volume Resistivity	ASTM D257 – 25°C / 77°F	$> 1 \times 10^{16}$	ohm-cm
Dielectric Constant	1 kHz – 25°C / 77°F	4.4	
Dissipation Factor	1 kHz – 25°C / 7786°F	.003	

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