ELANTAS
Electrical Insulation

Secondary Insulation

Product Information
Epoxylite 478 Thixo Epoxy Resin

Solventless Epoxy Resin
Electrical Insulation system
Dip & Bake / VPI

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Product Description

Elantas Zhuhai manufactured Epoxylite 478 Thixo is a low viscosity resin supplied as a single part impregnant for use with uncatalysed tapes. Similar in composition to Epoxylite 477, except it is slightly higher in viscosity and has thixotropic properties that provide greater retention on loosely wound structures and an improved surface build on enameled wire wound coils and taped apparatus.

Specifically designed as a V.P.I. impregnant for use on all types of electrical apparatus, taped coil, and enameled wire wound systems. With the proper processing cycle, it can be used throughout the low voltage range up to 7kV.

There are U. L. recognized insulation systems for all temperature classes and constructions that feature this material. It offers long term tank stability, and high resin retention. Since it is 100% solids, no solvent fumes are present during the cure process.

Epoxylite 478 Thixo is compatible with most insulation systems, has good chemical and water resistance being non-moisture sensitive and has a thermal rating up to and surpassing 180°C.
It has an excellent field history and is the industry standard for use in the medium voltage power generation industry, Navy and motor rewind market.

Areas of Application

The preferred applications for Epoxylite 478 Thixo are via conventional dip and bake / VPI application for:

- Impregnation of medium voltage motors and generators
- Random wound motors

Processing

Please note **DONOT PLACE** units heated over 54°C into the resin. Heating the resin over this threshold will shorten the shelf life of the material significantly.

The following cure schedule is recommended for conventional VPI:

- Preheat the unit to 148°C and hold for 2 hours
- Cool units down to a maximum of 54 °C (130°F)

Processing cont.

- Pull dry vacuum for approximately 10 minutes once the Hastings vacuum gauge registers 1-5mm of mercury for 30-60minutes.
- If possible measure the temperature of the unit which should be a minimum of 37°C
- Flood vacuum chamber with pre-vacuumed 478 Thixo from the storage tank.
- Cover the tops of the laminations by about 2-3 inches.
- Re-establish the vacuum to 2-5 mm of mercury. Hold vacuum for approximately 10 minutes.
- Break vacuum and apply pressure of 80-90psi and hold for a minimum of 1 hour.
- Release the pressure and transfer resin from the process tank to the storage tank.
- Allow units to drain over process tank for about 10-20 minutes.

Cure cycle

Epoxylite 478 Thixo can be cured 4 hours at 160°C (325°F) or 6 hours at 150°C (300°F) after part reaches cure temperature.
The fact that component temperature will lag significantly behind indicated oven air temperature, to a degree that will depend on machine size and oven efficiency, must be taken into account when determining cure cycles.

Packaging

Elantas Zhuhai manufactured Epoxylite 478 Thixo is currently sold in 25kg & 200kg containers for ease of use.

Health & Safety

Refer to Elantas Zhuhai Material Safety Data Sheet (MSDS) for Epoxylite 478 Thixo epoxy resin.

Shelf life

This resin should be stored at a 25°C 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.
Fail to store this product as recommended above may lead to deterioration in product performance and invalidate shelf life.

Properties of component as supplied

Property	
COLOUR	GREY, INTRINSICALLY VISCOUS LIQUID.
VISCOSITY @ 25°C Brookfield, TYPICAL	1500 - 4500CPS
FLASH POINT	>93°C
GEL TIME @ 150°C	12 - 18 MINUTES
FILM BUILD, TYPICAL	2 - 4 MILS

Cure resin Performance

UL FILE NUMBER	E76561
HELICAL COIL MW-35 @ 25°C	262N
HELICAL COIL MW-35 @ 150°C	22N
HARDNESS, SHORE D	85 - 91
DIELECTRIC STRENGTH (ASTM D149)	1600 V/MIL
DIELECTRIC STRENGTH (ASTM D149) Following 24 hours immersion in water	1400 V/MIL
HEAT DISTORTION TEMPERATURE (ASTM D648)	83°C
DISSIPATION FACTOR (ASTM D-150)	0.0067 @ 25°C 0.21 @ 130°C
THERMAL CONDUCTIVITY (ASTM D-1674)	5.3 X 10^{-4}CAL/CM/S/CM^2/^{O}C.

UL Recognized Insulation Systems (E87039)

CLASS 155°C	MV-3, Dash 2 F-5
CLASS 180°C	Dash 2 H-6, Dash 2 H-7