



- TECHNICAL DATA SHEET -

**DOLPHON XL-2102  
POLYESTER RESIN**

**DESCRIPTION**

DOLPHON XL-2102 is a one-package, 100% solid polyester resin, specially developed for dipping impregnation, both in open tanks and vacuum chambers. Hereafter the main features of this resin:



- UL approved (File OBOR2.E317427 and OBJS2.E317429)
- Excellent wetting properties
- Good bond strength
- Low weight loss on cure
- Very low odour
- Relatively fast cure cycles
- Low viscosity
- Approved EN 45545-2 for Rolling Stock

**TYPICAL APPLICATION**

Stators	Traction Coils	Transformers
Rotors	Inductances	

**CHARACTERISTICS**

<b>Physical properties</b>	
Density, 25°C	1.120±30 g/l
Viscosity, Ford cup n. 4 @ 25°C	110-170"
Viscosity, ISO 6 cup @ 25°C	80-120"
Gel Time @ 100°C	30-45'
Weight loss (10 g of liquid resin, cured 1 h. @ 150°C)	< 3,5%
Thermal conductivity	0,25-0,30 W/mK

<b>Mechanical properties according to IEC61033</b>		
	Temperature	N @ break
Method B, Bond Strength, Helical Coil (Test performed with MW 35 magnet wire - double impregnation - coils baked 1 h. @ 150°C)	25°C	>180
	80°C	>90
	155°C	>30

<b>Electrical properties</b>	
Dielectric Strength @ 25°C (on 25 µm thickness dry film), ASTM D-115	>3200 Volts
Volume Resistivity, IEC 60464- 2	>10 <sup>15</sup> Ω·cm
Volume Resistivity after 7 days of water immersion, IEC 60464 part 2	>10 <sup>12</sup> Ω·cm
Surface Resistance, IEC 60464- 2	>10 <sup>15</sup> Ω
Dielectric constant @ 25°C, ASTM D-150	3,3
CTI IEC 60112	600 M



Thermal class according to UL 1446		
Magnet Wire	Twisted pairs	Helical coils
MW 16-C	220°C	-
MW 28-C	130°C	-
MW 35-C	180°C	200°C

Chemical resistance		
Water absorption, ASTM D 570	90' at 100°C < 1.5% 24 h at 25°C < 1%	
Resistance to vapors of solvent, IEC 60464 part 2	Xylene Methanol Hexane	Resistant Resistant Resistant
Resistance to chemicals, 7 days of immersion, ISO175	Hydrochloric acid 10 %	< 2.5 %
	Sulfuric acid 30%	< 1.5 %
	Green gasoline	< 1.5 %
	Oil Transformer	< 0.5 %
	Detergent solution	< 1.5 %

Certification EN-45545-2 (September 2016)	
Requirement	Hazard Level
R22	HL1, HL2, HL3
R23	HL1, HL2, HL3

## **APPLICATION GUIDELINES**

DOLPHON XL-2102 can be easily applied by following these suggestions:

1. Preheat the units at 50-60°C (maximum);
2. Dip into the resin for 30-60';
3. Drain for 1 h. minimum;
4. Bake 2 ½ hours at 150°C, or 2 h. at 160°C or 75' at 170°C (time must be taken after units reach the baking temperature).

For the VPI application the cycle must be set for each type of machines, feel free to contact us.

## **STORAGE AND STABILITY**

DOLPHON XL-2102 is sensitive to UV rays. When not in use, the impregnation tanks must be protected from the light by means of a (non-transparent) lid. Exposition to sunlight can cause a partial gelification of the tank surface.

Dolphon XL-2102 is supplied pre-catalyzed. The shelf-life is 12 months at room temperature (max 30°C) when stored in original container. Store the resin in a cool place, protect from direct sunlight and keep away from heat sources.

DOLPHON XL-2102 reacts with bare copper, copper alloys and natural rubbers; it is therefore not advisable using these materials in the impregnating plant construction.

Our products don't require particular precautions excepting for those normally taken when chemicals are used. For more details, see the SDS.



Warning: All the information and application instructions concerning this product are based on technical specifications that we consider reliable, and are provided by way of example, according to our application experience. They do not establish any guarantee but only represent a starting point subject to alterations, according to the application and the kind of material to be treated. Before the product's use the utilizer must determine the suitability for the intended use undertaking all risks and responsibility for whatever may happen in connection with the application. The producer and/or seller will not be considered responsible for any accident, loss or damage (immediate or consequent) originating from the use and/or the inability to use the concerned product. Albesiano Sisa Vernici srl reserves the right to change or modify at any time and without any notice the technical specifications of the product described in this data sheet.

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