SynFlex Elektro GmbH
Auf den Kreuzen 24
D-32825 Blomberg Germany
Telefon +49-5235-968-0
E-Mail info@synflex.de

Dolphon® XL-2112 single-component resin

Dolphon® XL-2112 is a low emission single-component resin based on polyester.

Attributes

Dolphon® XL-2112 has the following known properties:

- UL-approved
- excellent wetting properties
- good bond strength
- very low weight loss on cure
- very low odour
- relatively fast cure cycles
- medium-low viscosity

Application

Dolphon® XL-2112 is a proven resin for impregnating large stators, rotors, transformers and coils, even in very demanding applications with impact loads.

Standards

- UL-approved class H (180 °C), File OBOR2.E317427 and OBJS2.E317429.
- UL-System-approved 180 °C (H)
- UL-approved with magnet wire
- temperature class acc. UL 1446:

magnet wire	Twisted pairs
MW 16-C	220 °C
MW 35-C	200 °C

Delivery forms

Dolphon® XL-2112 is available in 25 kg disposable containers, 230 kg barrels and 1,200 kg containers.

Storage

Dolphon® XL-2112 can be stored for 18 months at room temperature in a sealed container (max. 30 °C). The impregnating resin must be stored in a cool place and protected against direct sunlight, UV radiation and sources of

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heat.

Hardening

The curing time commences once the object temperature has been reached.
Typical curing times (minimum):

- 1 h - at 150 °C*
- 3-4 h - at 130 °C*
- 5-7 h - at 120 °C

*Full curing is measured by DSC. Time must be taken after units reach the baking temperature. For objects having to endure high mechanical or chemical stress during service, longer curing times are recommended.

Processing

Dolphon® XL-2112 can be processed in dipping plants and vaccum chambers.

Dolphon® XL-2112 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.
Suggested impregnating process:
- Preheat the units at 50-60 °C (max.)
- Dip into the resin for 30-60 min.
- Drain for 1 h min.
- Bake at:* (see curing)

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

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Mechanical	Unit of measure	Conditions	Values	Test method
Gel time	min	at 100 °C	30-50	
Weight loss	%	10 g backed 1 h at 150 °C	<3.5	
Bond strength	N	25 °C	˃130	IEC 61033 Helical Coil
Bond strength	N	80 °C	˃82	IEC 61033 Helical Coil
Bond strength	N	155 °C	˃45	IEC 61033 Helical Coil

Thermal	Unit of measure	Values	Test method
Thermal conductivity	W/mK	0.25-0.30	
Thermal class	°C	200	MW 35-C /UL 1446
Thermal class	°C	220	MW16-C / UL 1446

Chemical	Unit of measure	Conditions	Value	Test method
Reaction with natural rubber		yes		
Resistance		Xylene, Methanol, Hexane	resistent	IEC 60464-2

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Chemical	Unit of measure	Conditions	Value	Test method
Resistance	%	transformer oil	<0.5	ISO 175 - 7 days
Resistance	%	30 % sulfuric acid	<1.5	ISO 175 - 7 days
Resistance	%	10 % hydrochloric acid	<2.5	ISO 175 - 7 days
Water absorption	%	90 min. at 100 °C	<1.5	ASTM D 570
Water absorption	%	24h at 23 °C	<1	ASTM D 570

Electrical	Unit of measure	Conditions	Values	Test method
Dielectric strength	kV/mm	0.025 mm film / 25 °C	>128	ASTM D-115. RT
Dielectric constant		at 25 °C / 50 Hz	3.2	ASTM D-150
Volume resistivity	Ω x cm	25 °C	>10^15	IEC 60464-2
Volume resistivity	Ω x m	after 7 d water immersion	>10^12	IEC 60464-2

Liquid phase	Unit of measure	Conditions
Specific density	g/cm³	at 25 °C
Viscosity	mPas	25 °C

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Liquid phase	Unit of measure	Values	Test method
Specific density	g/cm³	1,12-1,18	
Viscosity	mPas	1700-2000	Brookfield
Specific density	g/l		

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