SynFlex Elektro GmbH
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Dolphon® XL-2103 1K Resin

Dolphon® XL-2103 is a slightly thixotropic, 1K resin based on polyester.

Attributes

Dolphon® XL-2103 is characterised by the following properties:

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

Application

Dolphon® XL-2103 is suitable for impregnation of:

- stators
- rotors
- traction coils
- transformers
- inductances
- other devices

Standards

- UL-approved class H (180 °C), File Number OBOR2.E 317427 + File OBJS.2 E317429
- UL-System-approved from 130 - 220 °C
- UL-approvement:

Temperature Class acc. UL 1446:

NEMA - MW-16 Twisted Pair 220 °C
NEMA - MW-35 Twisted Pair 200 °C

Delivery forms

Dolphon® XL-2103 is delivered in 25 kg disposable containers, 230 kg barrels and 1000 kg containers.

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Storage

Dolphon® XL -2103 can be stored for 6 months at room temperature in a sealed container (max. 30 °C). The dip resin must be stored in a cool place and protected against direct sunlight, UV radiation and sources of heat. The storage life of the dip resin can be extended indefinitely by adding fresh resin to the dipping bath during processing. It is recommended to send a 300 g sample to our laboratory every 6 months for a vscosity and gel-time control.

Hardening

Curing is possible in a closed oven with or without preheating.
The curing time commences once the object temperature has been reached.

Typical curing times:
150 °C - 1 h*
130 °C - 3-4 h*
*(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.
Best results will be achieved at:
150 °C - 2.5 h
160 °C - 2 h
170 °C - 75 min.

Processing

Dolphon® XL-2103 can be applied both under vacuum and in open dip tanks at atmospheric pressure. For application in open dip tanks or with conveyor systems the following cycle is suggested:
1. Preheat the units at 50-60 °C (max.)
2. Dip into the resin for 30-60'
3. Drain for 1h min.
4. Bake min. 3-4h at 130 °C or 1h at 150 °C* (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
Thermal conductivity	W/mK		0.25 to 0.30	
Weight loss	%	10 g gehärtet 1 h at150 °C	< 3.5	
Bond strength	N	25 °C	>180	ASTM D-2519 Helical Coil
Bond strength	N	80 °C	>90	ASTM D-2519 Helical Coil
Bond strength	N	155 °C	>30	ASTM D-2519 Helical Coil

Thermal	Value
Thermal class	H (180 °C)

Electrical	Unit of measure	Conditions	Values	Test method
Dielectric strength	kV/mm	0.025 mm layer	> 128	ASTM D-115
Volume resistivity	Ω x cm	at 25 °C	>10^15	IEC 60464-2
Volume resistivity	Ω x cm	after 7 d water storage	>10^12	IEC 60464-2
Surface resistivity	Ω		>10^15	IEC 60464-2

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Electrical	Unit of measure	Conditions	Values	Test method
Dielectric constant		at 25 °C	3.1	ASTM D-150
Creep resistance		CTI	>600	IEC 60112

Liquid phase	Unit of measure	Conditions	Values	Test method
Viscosity	s	at 25 °C	30 - 40	Ford Cup 8
Gel time	min	at 110 °C	25-40	
Specific density	g/cm³	at 25 °C	1.12-1.18	
Viscosity	mPas	at 25 °C	2500-3000	Brookfield

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