SynFlex Elektro GmbH
Auf den Kreuzen 24
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Voltatex® 2100 Impregnating varnish

Varnish composed of polyester imide / phenolic resin.

Attributes

Voltatex® 2100 is a transparent, ready-to-use and heat-curing impregnating varnish composed of polyester imide/ phenolic resin combination.

Particular features:

- fast curing
- hard-eleastic bonding
- compatible with all common magnet wires

The cured varnish is resistant to:

- solvent vapours
- transformer oils
- climate-related stress
- mould infestation
- acids, alkalines and ammonia

Application

Voltatex® 2100 is applicable for:

- insulation systems up to thermal class H, acc. IEC 60085
- in general suitable up to thermal class E-H, depending on curing time and -temperature.
- electric motors
- rotors with thermal and mechanical high stress

Standards

- Thermal class acc. IEC 216: TI 155-165
- Type acc. E DIN IEC 60646-3-2: type 155
- UL-temperature class: 200

Delivery forms

Voltatex® 2100 is delivered in 25 kg one-way compounds.

Base

Polyester imide / phenolic resin

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Color

Transparent

Storage

The resin can be stored for up to 12 months at max. 25 °C if sealed correctly in original containers.

Hardening

- Thermal class E: 4-6 h at 120 °C
- Thermal class B: 4-6 h at 130 °C
- Thermal class F-H: 6 h at 150 °C

Protection

Cured Voltatex® 2100 is biologically inactive and not dangerous to health. When processing the liquid resin, please refer to the Material Safety Data Sheet (MSDS) for Voltatex® 2100.

Processing

Voltatex® 2100 is delivered ready-to-use. The consistency can be lowered if necessary with Voltatex® T022.

Cleaning

Cured Voltatex® 2100 is almost insoluble. Therefore, application equipment should be regularly cleaned with cleaner Voltatex® T050 or T060. All equipment cleaning and maintenance should be carried out in accordance with the equipment manufacturer’s instructions.

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Mechanical	Unit of measure	Value	Test method
Bond strength of twisted coils room temperature	N	250 ± 30	IEC 60455-2, test method A acc. IEC 61033
Bond strength of twisted coils 130 °C	N	46 ± 4	IEC 60455-2, test method A acc. IEC 61033
Bond strength of twisted coils 155 °C	N	34 ± 2	IEC 60455-2, test method A acc. IEC 61033
Bond strength of twisted coils 180 °C	N	25 ± 2	IEC 60455-2, test method A acc. IEC 61033

Thermal	Unit of measure	Condition	Value	Test method
Thermal class		Helical Coil	200	UL 1446, ASTM D2519
Thermal class		Twisted Pair	200	UL 1446, ASTM D2307
Temperature class	°C	based on dielectric strength	160-170	IEC 60216
Temperature index	°C	based on weight loss	155-165	IEC 60216

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Chemical	Unit of measure	Condition	Value	Test method
Resistance		mould, test method I (28 days without add. nutrient solution)	range 0 - resistant	DIN IEC 68 part 2-10
Resistance		temperature changes: -55 °C/+130 °C	resistant	Test Na acc. DIN IEC 68 part 2
Resistance		dry heat: +150 °C	resistant	Test Bb DIN IEC 68 part 2
Resistance		Coldness: -55 °C	resistant	Test Ab acc. DIN EC 68 part 2
Impact on enamelled wires			compatible with all common enamelled wires	
VOC acc. 31. BImSchV	%		50.5	2010/75/EU

Electrical	Unit of measure	Value	Test method
Specific volume resistance at 23 °C	Ω*cm	≥10^15	acc. IEC 60455-2, test method acc. IEC 60093
Specific volume resistance after 96 h water immersion	Ω*cm	≥10^15	acc. IEC 60455-2, test method acc. IEC 60093
Dielectric strength at 23 °C and 50 % r.h.	kV/mm	≥100	acc. IEC 60455-2, test method acc. IEC 60243-1
Dielectric loss factor at (AC, 23 °C, 50 Hz)		≤20x10^-3	acc. IEC 60455-2, test method acc. IEC 60250

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Electrical	Unit of measure	Value	Test method
Dielectric loss factor at 155 °C and 50 Hz		≤100x10^-3	acc. IEC 60455-2, test method acc. IEC 60250
Dielectric constant at 23 °C between 50 Hz and 1 MHz		3.0±0.5	nach IEC 60455-2, Prüfverfahren nach IEC 60250
Dielectric constant at 155 °C and 50 Hz		5.0±0.5	acc. IEC 60455-2, test method acc. IEC 60250
Loss factor cross section 0.2=200x10^-3	°C	≥170	acc. IEC 60455-12, test method acc. IEC 60250

Liquid phase	Unit of measure	Condition	Value	Test method
Binder content	%		48-52	
Viscosity	mPas	at 25 °C	295-365	DIN 53019
Flow time	s	at 23 °C	65-95	DIN 53211