1K-NZ 97

VUPOS IMPREGNANTS

Characteristic

1K-NZ 97 is a single-component, trickling, impregnating resin based on a modified unsaturated polyesterimide resin dissolved in styrene. It is a clear, medium viscous liquid of yellow to yellowish-red coloration.
It is characterized by the following properties:

- short curing time at 130 °C
- very good mechanical strength
- resistance to solvent vapors, transformer oil and freons

Field of application

1K-NZ 97 is designed for impregnation by trickling technology. It is suitable for applying to high mechanically and thermally stressed windings of alternators and high speed rotary machines for household appliances and hand tools of temperature class H (180 °C)

Processing

1K-NZ 97 is processed on the trickling impregnating devices. Exact instructions for processing will be provided depending on the type of processing and type of impregnated object at the customer. To achieve the maximum lifetime of the impregnant, its operating temperature is recommended max. 23 °C
When handling the impregnator, follow the safety instructions in the Safety Data Sheet.
To clean equipment and work tools from non-hardened impregnant, it is recommended to use VUKI thinner T5.

Hardening

Hardening conditions:

- Conventional curing: 15 – 30 minutes from reaching 130°C inside the windings
- The oven has to be equipped with a suction device and must be non-explosive

Processing properties

Parameter	Standard	Condition	Value	Unit	Description
Density	STN EN ISO 2811-1	20 °C	**1040 – 1060**	kg/m^3	
Flow time	DIN 53 211	23 °C	**37 – 43**	s	DIN cup 4 mm
Shelf life		max. 23 °C	**min. 6**	month	
Flash point	STN EN ISO 2592		**32**	°C	
Gel time	DIN 16 945	100 °C	**4 – 8**	Min	
Reaction time	STN EN 60455-2	100 °C	**5 – 9**	min	
Exothermic temperature	STN EN 60455-2	100 °C	**220 – 240**	°C	
VOC			**10 – 15**	%	
Hardening time		130 °C	**15 – 30**	min	from reaching of required temperature in the winding
Effect on enameled wires	STN EN 60851-4,5 STN EN 60317		**Suitable**		compatible with all commonly used wires

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Parameters after hardening

Parameter	Standard	Condition	Value	Unit	Description
Drying in thick layer	STN EN 60464-2		**I 2.1** **S1** **U1**		sample solid, free of cracks and bubbles, surface smooth, non-stick
Dielectric strength	STN EN 60243-1	23 °C 155 °C after 24 h in water at 23 °C	**> 80** **> 60** **> 35**	kV/mm	cylindrical electrodes ø 6 mm
Volume resistivity	STN EN 62631-3-1	23 °C 155 °C after 96 h in water 23 °C	**> 10^{14}** **> 10^{10}** **> 10^{14}**	Ω.m	
Twisted coil strength	STN EN 61 033 art. 2.1 method A	23 °C 155 °C	**> 250** **> 30**	N	
Temperature index	STN IEC 60 216		**180**	°C	Test voltage 1500V (twisted pair)

Packing, storing and manipulation

Impregnating resin is supplied in non-returnable, clean drums with weight 30kg or another according agreement. Impregnating resin is to be stored in tightly closed containers in a dry, ventilated warehouse at temperature in the range +5°C to +23 °C. When the storage conditions are met, the quality of the impregnant is guaranteed for 6 months from the date of manufacture.
CAUTION: Extreme heat, contamination or exposure to direct sunlight may result in the polymerization and deterioration of the impregnant!
In terms of transport regulations, the impregnating resin is classified as a dangerous product class 3, UN: 1866.

Safety

The impregnant contains a reactive solvent. Safety and health instructions are given in the MSDS.

Certification

- twisted pairs: 180 °C, thermal class H (UL file E233982)

NOTE

The information in this document is consistent with our best knowledge of the date of publication. This information can be a subject of revision without prior notice if new knowledge and experience are available. The data provided falls within the normal range of product properties and relates only to the specified material. These data may not apply to materials used in combination with other materials or ingredients or other processes, unless expressly stated otherwise. The data provided should not be used to set limits or used separately as a basis for the sample: they are not intended to compensate for any testing that may be necessary to make a decision as to whether the specific material is suitable for your particular purpose. Because VUKI cannot predict all variants of end-use product conditions, VUKI does not provide guarantees and has no responsibility with respect to any use of this information. Nothing in this publication is considered to be a use or recommendation to violate any patent rights.

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