NAB/400-1K

VUDAC IMPREGNANTS

Characteristic

NAB/400-1K is a medium-viscosity single-component impregnant based on unsaturated polyester-imide resin dissolved in reactive diacrylate. It has a clear amber look and is odorless. There is little emission (VOC) released during curing. Does not pollute the work environment, does not create a fire hazard. Waste air does not need to be cleaned.

Impregnation is characterized by the following properties:

- ecological
- excellent thermal resistance
- excellent mechanical strength
- the cleanliness of the systems surface after impregnation
- minimum losses during curing
- exceptional cure efficiency
- customizable processing properties according to customer requirements

Field of application

NAB/400-1K is suitable for applications in temperature class H. It is designed for the impregnation of windings of electric rotary machines of general use and transformers. Also suitable for electric machines wound with large diameter wires and large cross section profile wires.

Processing

NAB/400-1K can be processed on conventional impregnation devices at atmospheric pressure or vacuum by dipping, flooding or widening under rotation. Exact instructions for processing will be provided depending on the customer's processing method.

It can be processed immediately without the need to add additional additives as it is a one-component system. The recommended impregnant change in the tank is 20% of the total volume per month. To achieve the maximum life time of the impregnating resin, its operating temperature is recommended to not exceed 25 °C.

When handling the impregnator, follow the safety instructions in the **Safety Data Sheet.**

To clean the equipment and work tools from undamaged impregnant it is recommended to use VUKI thinner T5.

Hardening

Curing conditions:

- Conventional curing: 2 – 3 hours at 130 °C, or
  1 – 1,5 hours at 150 °C

- Oven has to be equipped with vapor extraction

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Processing properties

Parameter	Standard	Condition	Value	Unit	Description
Density	STN EN ISO 2811-1	20 °C	**1040 – 1100**	kg/m^3	
Viscosity	STN 67 3014	25 °C	**400 – 600**	mPa.s	value adjustable according to customer request
Flash point	STN EN ISO 2592		**> 112**	°C	
Gel time	DIN 16 945	130 °C	**3 – 5**	min	
Reaction time	STN EN 60455-2	130 °C	**4 – 6**	min	
Exothermic temperature	STN EN 60455-2	130 °C	**180 – 230**	°C	
VOC			**< 2**	%	
Hardening time		130 °C	**2 – 3**	hour	from reaching a temperature of 130°C in the winding
		150 °C	**1 – 1,5**	hour	from reaching a temperature of 150°C in the winding
Effect on enameled wires	STN EN 60851-4,5 STN EN 60317		**suitable**		compatible with all commonly used wires

Parameters after hardening

Parameter	Standard	Condition	Value	Unit	Description
Drying in thick layer	STN EN 60464-2	1 h at 100 °C + 1 h at 150 °C	**I 1.1** **S1** **U1**		sample solid, no cracks and bubbles, surface smooth, non-stick
Layer thickness on AL sheet			**8 (52)***	µm	*valid for NAB/400-1Kn
Water absorption	STN EN ISO 62	168 h at 23°C	**< 0,6**	%	
Electrical strength	STN EN 60243-1	23 °C 180 °C after 96 h/ 92% r.h./ 23 °C	**60** **50** **45**	kV/mm	cylindrical electrodes ø 6 mm
Volume resistivity	STN EN 62631-3-1	23 °C 180 °C after 168 h in water, 23 °C	**10^{14}** **10^{9}** **10^{13}**	Ω.m	
Twisted coil strength	STN EN 61 033 art. 2.1 method A	23 °C 180 °C	**> 220** **> 60**	N	
Helical coil strength	STN EN 61 033 art. 2.1 method B	23 °C 180 °C	**84** **20**	N	
Temperature index	STN IEC 60 216		**180**	°C	

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Packing, storing and manipulation

Impregnating resin is supplied in non-returnable, clean, metal drums with weight 25 kg and 200kg. Alternatively, other packaging can be used according agreement. Impregnating resin is stored in tightly closed containers in a dry, ventilated place at + 5 ° C to + 25 ° C. When the storage conditions are met, the quality of the impregnating resin is guaranteed 6 months from the date of manufacture.

CAUTION: Extreme heat or contamination may result in the polymerization and deterioration of the impregnant!

Impregnating resin is not classified as a dangerous product.

Certificates

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