

# 1K-NAH/99/800/2Z



## VUDAC IMPREGNANTS

### Characteristic

1K-NAH/99/800/2Z is a medium viscosity double-component impregnant based on unsaturated polyester-imide resin dissolved in reactive diacrylate. It has a clear to slightly cloudy yellow appearance. 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.

Impregnating resin is characterized by the following properties:

- excellent thermal resistance
- excellent mechanical strength
- cleanness of system surfaces after impregnation
- very short curing time
- minimum cure losses
- extra curing efficiency
- adjustable processing properties according to customer requirements

### Field of application

1K-NAH/99/800/2Z is designed for impregnation by trickling. It is suitable for impregnation of electrically rotating electric motors, traction motors, dampers, and transformers in temperature class F to H (155-180 °C) wound with larger diameter coated and high profile cross sectional wires.

### Processing

1K-NAH/99/800/2Z is a two-component system, it is necessary to mix the impregnant in a 100: 1 weight ratio with the TBP initiator and mix well before processing. The impregnation is processed in closed impregnation devices at atmospheric pressure by trickling. Good suction of the vapor produced during curing should be ensured. Exact instructions for processing will be provided depending on the customer's processing method.

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: 15 – 30 minutes at 130 °C, or  
10 – 15 minutes at 140 °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	1050 – 1150	kg/m <sup>3</sup>	
Viscosity	STN 67 3014	25 °C	700 – 1000	mPa.s	value adjustable according to customer request
Stability		23 °C	min. 12	months	in an uninitiated state
			min. 7	days	in an initiated state
Flash point	STN EN ISO 2592		> 112	°C	
Gel time	DIN 16 945	100 °C	3 – 5	min	
		130 °C	1,5 – 2,5		
Reaction time	STN EN 60455-2	130 °C	1,5 – 3	min	
Exothermic temperature	STN EN 60455-2	130 °C	220 – 300	°C	
VOC			< 3	%	
Hardening time		130 °C	15 – 30	min	from reaching of mentioned in the winding
		140 °C	10 – 15	min	from reaching of mentioned 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	2 h at 80 °C + 1 h at 90 °C + 2 h at 130 °C	I 1.1 S1 U1		sample solid, no cracks and bubbles, surface smooth, non-stick
Layer thickness on AL sheet			-	µm	
Electrical strength	STN EN 60243-1	23 °C 155 °C after 96h/ 92 % rel.h./23 °C	80 - 100 60 - 80 40 – 60	kV/mm	cylindrical electrodes ø 6 mm
Volume resistivity	STN EN 62631-3-1	23 °C 180 °C after 96h in water at 23 °C	10 <sup>14</sup> 10 <sup>9</sup> 10 <sup>14</sup>	Ω.m	
Twisted coil strength	STN EN 61 033 art. 2.1 method A	23 °C 180 °C	260 – 320 70 – 120	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 packaging with weight 200kg, 25kg or 10 kg. 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 12 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!

Impregnating resin is not classified as a dangerous product.

### Safety

The impregnating resin contains hexanediol diacrylate as a reactive solvent which irritates the skin. Impregnating is liquid IV. hazard class according to MV SR no. 86/1999 Coll.

Safety and health instructions are given in the MSDS

### Certificates

- 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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