

NAB/250-1K AC



VUDAC IMPREGNANTS

Characteristic

NAB/250-1K AC is a low-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.

Impregnation is characterized by the following properties:

- ecological
- excellent thermal resistance
- excellent mechanical strength at working temperature of motor respectively transformer
- low energy consumption
- excellent ability to form a sufficient insulating layer
- minimum losses during curing
- **resistant to moisture and corrosion**
- exceptional cure efficiency
- highly stable in liquid state
- resistant to transformer oils and refrigerants

Field of application

NAB/250-1K AC 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 small diameter wires and small to medium-size cross section profile wires.

Processing

NAB/250-1K AC 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.

The processing equipment does not need to be in an explosion-proof version, and there is no need for additional combustion equipment for emissions. Winding can be heated to 30-40 °C prior to impregnation and the impregnant can also be heated to 25-30 °C during impregnation.

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
- Curing time are to be measured from reaching of mentioned temperature in the winding



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Processing properties

| Parameter | Standard | Condition | Value | Unit | Description |
|--------------------------|----------------------------------|--------------------------------|------------------|-------------------|---|
| Density | STN EN ISO 2811-1 | 20 °C | 1080 – 1120 | kg/m ³ | |
| Viscosity | STN EN ISO 2555 | 23 °C Spindle 03 100 rpm | 200 – 300 | mPa.s | Brookfield method |
| Outflow time | DIN 53 211 | 23 °C | 40 - 60 | s | |
| Stability | | 23 °C 40 °C | min. 6 min. 1 | Month | |
| Flash point | STN EN ISO 2592 | | > 112 | °C | |
| Gel time | DIN 16 945 | 130 °C | 1/30 – 3 | 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 150 °C | I 1.1 S1 U1 | | sample solid, no cracks and bubbles, surface smooth, non-stick |
| Electrical strength | STN EN 60243-1 | 23 °C 180 °C after 96 h/ 92% r.h./ 23 °C | > 60 > 45 > 40 | kV/mm | cylindrical electrodes ø 6 mm |
| Volume resistivity | STN EN 62631-3-1 | 23 °C 180 °C after 96 h in water, 23 °C | 10 ¹⁴ 10 ⁹ 10 ¹⁴ | Ω.m | |
| Twisted coil strength | STN EN 61 033 art. 2.1 method A | 23 °C 180 °C | > 200 > 50 | 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.

Safety

The impregnating resin contains butanediol dimethacrylate as the reactive solvent. Impregnant is liquid IV. hazard class according to Decree of the Ministry of Interior of the Slovak Republic no. 86/999 Coll. The Safety and Health Guidelines are listed in the Material Safety Data Sheet.

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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