

3. IMPREGNATING RESINS **VUDAC**/ Polyesterimide in diacrylate/ **1K-NAH 99 UV**



CABLES



IMPREGNANTS



WIRES



RESEARCH



Application:

Impregnating resins are suitable for insulation systems – thermal class H. They are suitable for impregnation of windings of electrical rotating machines and transformers from big diameter enameled wires and from rectangular wires

Characteristics:

Impregnating resins are one component solution of diluted unsaturated polyesterimide in diacrylate. Only a small amount of volatile substances avoid during curing. Impregnating resins don't pollute the environment and don't cause fire hazards. It is not necessary to clean exhaust air.

Processing:

Impregnating resin 1K-NAH 99 UV can be processed on conventional impregnating equipments at atmospheric pressure or vacuum, dipping, flooding or wanding in rotation or on impregnating equipment with combination of curing with current or UV radiance.

Processing data and properties of liquid resin:

			1K-NAH 99 UV
Density (DIN 53 217)	20 °C	[kg/m ³]	1050 - 1150
Viscosity	25 °C	[mPa.s]	2000 - 2500
Shelf-life	5°C – 25 °C	[months]	min. 6
Flash point STN EN 22592		°C	>110
Gel-time ¹	130 °C	[min]	3 - 5
Reaction time ^{2,3}	130 °C	[min]	4 - 7
Maximum temperature ^{2,3}	100 °C	[°C]	190 - 230
Curing time ⁴	130 °C	[h]	2 - 3
Effect of resin on enameled wires ⁵ (IEC 317 - 3, - 8, - 13)			OK



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Properties after cure:

			NAH/UV-1K
Ability to cure in considerable thickness ^{2,6}			I. I. I. I. ¹⁰ O. I. I. I.
Curing of test specimen	150 °C	[h]	1
Electric strength ^{2,7}	23 °C	[kV/mm]	80
	155 °C		60
	after 96hrs in 92% relative humidity in water at 23 °C		50
Volume resistivity ²	23 °C	[Ω.m]	10 ¹⁴
	155 °C		10 ⁸
	after immersion in water for 96 hrs at 23 °C		10 ¹¹
Twisted coil test ⁸	23 °C	[N]	250
	155 °C		65
	180 °C		50
Thermal endurance ⁹		[°C]	160-180

1 DIN 16 945 Method A

2 DIN 464 48 Blatt 1

3 Fe-Ko after ASTM D 2471-71

4 from reached temperature 130 oC in winding

5 STN 67 31 50 part 11, Method B, after 60 mi

6 2 hrs at 100°C+ 2 hrs at 110°C +1hr at

120°C+1hr at 150°C

7 Test specimens A2, cylindrical electrode ø6 mm

8 STN IEC 61033

9 STN IEC 60216-1, -2

10 The upper side: S – smooth

the underside: U- non tacky

the interior: I – hard, free of bubbles

Packing and storage:

Impregnating resins are delivered in disposable, clean and unused metal 200 or 50 kg drums or in another packing according to agreement between manufacturer and buyer. They have to be stored in tightly closed drums at temperature from +5°C to + 25°C.. In terms of traffic regulations impregnating resins are not classified as hazardous product.

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