

## 3. IMPREGNATING RESINS **VUDAC/** Polyesterimide in diacrylate/ **1K-NAH 99/800/u**



CABLES



IMPREGNANTS



WIRES



RESEARCH

### Application:

Impregnating resin is suitable for dipping impregnation of high mechanical stressed windings of transformers electrical rotating machines for starters alternators and tools.

### Characteristics:

Impregnating resin 1K-NAH 99/800/u features with short curing time at 120-130°C. It is one component unsaturated polyesterimide resin in diacrylate. Only a small amount of volatile substances avoid during curing (cca 1,5 to 2%) . It is resistant to vapor solvents, oils and refrigerator liquids.

### Processing data and properties of liquid resin:

Density (DIN 53 217)	20 °C	[kg/m <sup>3</sup> ]	1050-1150
Viscosity	25 °C	[mPa.s]	700-1000
Shelf- life	5- 23 °C	[months]	min. 6
Flash point (Cleveland)		[°C]	>130
Gel-time <sup>1</sup>	130 °C	[min]	3-4
Reaction time <sup>2,3</sup>	130 °C	[min/s.]	3/20
Maximum temperature <sup>2,3</sup>	100 °C	[°C]	269
Vapors pressure	50 °C	mbar	0,014
Curing time <sup>4</sup>	130 °C 120 °C	[h]	1-2 3
Effect of resin on enamelled wires <sup>5</sup>			OK



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### Properties after cure:

Curing of test specimen		130 °C	[h] 2
Ability to cure in considerable thickness <sup>2,6</sup>		[degree <sup>10</sup> ]	S 1 U 1 I 1.1
Electric strength <sup>2,7</sup>	23 °C 155 °C after 96 h in 92% humidity at 23 °C	[kV/mm]	80-100 60-80 40-60
Volume resistivity <sup>2</sup>	23 °C 155 °C after immersion in water for 96 h at 23 °C	[Ω .m]	10 <sup>14</sup> 10 <sup>9</sup> 10 <sup>13</sup>
Twisted coil test <sup>8</sup>	23 °C 180 °C	[N]	250-350 100-120
Thermal endurance <sup>9</sup>		[°C]	183

1. DIN 16 945 Method A

2. DIN 46 448 Blatt 1

3. Fe-Ko after ASTM D 2471-71

4. from reached temperature 130 °C in winding

5. STN 67 31 50 part. 11, met. B after 60 min at 60 °C min at 60 °C

6. 1 h at 100 °C + 2 h at 130 °C

7. Test specimens A2, cylindrical electrode ø6 mm

8. IEC 61033 met. A,

9. IEC 60216-1,-2

10. : S – smooth

The underside : U - non tacky

The interior: I – hard , free of bubbles

### Packing a storage:

Impregnating resin is delivered in drums. It 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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