1. IMPREGNATING RESINS **VUPOS/** Polyesterimide in styrene/ **1K - NZ 97**

CABLES IMPREGNANTS WIRES RESEARCH

Application:

This resin is suitable for impregnation the mechanically stressed windings for example rotor winding of low voltage electrical rotating machines by trickle method.

Charakteristics:

Trickle resin 1K-NZ 97 is a solution of unsaturated polyesterimid in styrene. Trickle resin has a short curing time at temperature 130 °C . It is resistant to vapour solvents, transformer oils and refrigerator liquids.

Processing data and properties of liquid resin:

Density (DIN 53 217)	20°C	[kg/m^{3}]	1030 – 1050
Flow time(DIN Cup 4)	23°C	[s]	37 –43
Viscosity	23°C	[mPa.s]	160-180
Shelf- life	max. 23°C	[months]	min. 6
Flash point (AP)		[°C]	32
Gel-time [1]	100°C	[min]	4-8
Reaction time [2,3]	100°C	[min]	5-9
Maximum temperature [2,3]	100°C	[°C]	220-240
Curing time[4]	130°C	[min]	15 – 30
Effect of resin on enamelled wires [5]			OK

VUKI a.s., Rybničná 38, SK-831 07 Bratislava, Tel: 421 2 4488 2824, 49213 231, 49213 213, Fax: 421 2 4488 1041,
email:info@vuki.sk, www.vuki.sk

1. IMPREGNATING RESINS **VUPOS/** Polyesterimide in styrene/ **1K - NZ 97**

Properties after cure:

Curing of test specimen	130 °C	[h]	2
Ability to cure in considerable thickness [2,6]		[degree [10]]	S 1 U 1 I 1.1
Electric strength [2,7]	23 °C 155 °C after 96 h in 92% humidity 23 °C	[kV/mm]	80-100 60-80 40-60
Volume resistivity [2]	23 °C 155 °C after immersion in water for 240h 23 °C	[Ω .m]	10^{14} 10^{11} 10^{14}
	Twisted coil test [8] 23 °C 155 °C	[N]	330 – 350 30 – 40
Thermal endurance [9] Test criterion:		[°C]	
	Bond strength 22 N (Helical coil)		172
	Breakdown voltage 700 V (Twist)		183
Thermal endurance [11] Test criterion:			
	Bond strength 22 N (Helical coil)	[°C]	181
	Breakdown voltage 1500 V (Twisted pairs)*	[°C]	180

1. DIN 16 945 Method A
2. DIN 46 448 Blatt 1
3. Fe-Ko –thermoelement after ASTMD 2471-71
4. After the winding has reached 130 °C
5. STN 67 3150 čl. 11, met. B after 60 min at 60 °C
6. 1 h at 100°C + 1 h at 130°C
7. Test specimens A2, cylindrical elektrode ø6 mm
8. IEC 61033 met. A
9. IEC 60216
10. The upper side: S – smooth
    The underside : U - non tacky
    The interior: I – hard , free of bubbles
11. UL test 1446 File E233982

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.

VUKI SINCE 1950

VUKI a.s., Rybničná 38, SK-831 07 Bratislava, Tel: 421 2 4488 2824, 49213 231, 49213 213, Fax: 421 2 4488 1041, email:info@vuki.sk, www.vuki.sk