1. IMPREGNATING RESINS **VUPOS/** Polyesterimide in styrene/ **1K - NZ 97/65**

Application:

This resin is suitable for impregnation the mechanically stressed windings for example rotor winding of low voltage electrical rotating machines, high speed rotating machines for domestic appliances and hand tools of thermal class H.

Charakteristics:

Trickle resin 1K-NZ 97/65 is single-component solution of unsaturated polyesterimid in styrene. Trickle resin has a short curing time at temperature 130 °C . The impregnated windings have an excellent mechanical strength, resistance to vapour solvents, transformer oils and refrigerator liquids.

Processing data and properties of liquid resin:

Density (DIN 53 217)	20 °C	[kg/m^{3}]	1050 – 1070
Flow time(ISO 6)	23 °C	[s]	40-60
Viscosity	23 °C	[mPa.s]	290 -350
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

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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 has to be stored in tightly closed drums at temperature max. +23 °C.

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