IMPREGNANTS | IMPREGNANTY

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





IMPREGNANTS WIRES







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/m³]	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



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Properties after cure:

Curing of test specimen 130 °C [h] 2				
U 1 11.1	Curing of test specimen	130 °C		2
11.1 Electric strength 2.7 23 °C 155 °C [kV/mm] 60-80 6	Ability to cure in considerable thickness 2,6		[degree ¹⁰]	\$1
Electric strength 2,7 23 °C 155 °C (kV/mm) 60-80	,			
155 °C [kV/mm] 60-80 40-60 Volume resistivity 2 23 °C 10 ¹⁴ 155 °C [Ω.m] 10 ¹¹ after immersion in water for 240h 23 °C 10 ¹⁴ Twisted coil test 8 23 °C 10 ¹⁴ Thermal endurance 9 [°C] Test criterion: Bond strength 22 N (Helical coil) 172 Breakdown voltage 700 V (Twist) 183				
Volume resistivity 2 40-60	Electric strength ^{2,7}			
Volume resistivity 2 23 °C 10 14 10 11 10			[kV/mm]	
155 °C [Ω.m] 10 ¹¹ after immersion in water for 240h 23 °C Twisted coil test ⁸ 23 °C [N] 330 – 350 155 °C [V] Thermal endurance ⁹ Test criterion: Bond strength 22 N (Helical coil) Thermal endurance ¹¹ Test criterion:				
### Thermal endurance 11 Test criterion: ###################################	Volume resistivity ²			
Twisted coil test 8 23 °C [N] 330 – 350 30 – 40 Thermal endurance 9 Test criterion: Bond strength 22 N (Helical coil) 172 Breakdown voltage 700 V (Twist) 183 Thermal endurance 11 Test criterion:			$[\Omega.m]$	
Thermal endurance 9 Test criterion: Bond strength 22 N (Helical coil) Breakdown voltage 700 V (Twist) Thermal endurance 11 Test criterion:		after immersion in water for 240h 23 °C		10"
Thermal endurance 9 Test criterion: Bond strength 22 N (Helical coil) Breakdown voltage 700 V (Twist) Thermal endurance 11 Test criterion:		Twisted coil test ⁸ 23 °C	[N]	330 — 350
Test criterion: Bond strength 22 N (Helical coil) Breakdown voltage 700 V (Twist) Thermal endurance 11 Test criterion:		155 ℃		30 – 40
Bond strength 22 N (Helical coil) Breakdown voltage 700 V (Twist) Thermal endurance 11 Test criterion:	Thermal endurance ⁹		[.c]	
Breakdown voltage 700 V (Twist) Thermal endurance 11 Test criterion:	Test criterion:			
Thermal endurance 11 Test criterion:		Bond strength 22 N (Helical coil)		172
Thermal endurance 11 Test criterion:		n II k 700 W.T. v.)		100
Test criterion:		Breakdown voltage /UU V (Twist)		183
Test criterion:	Thormal and uranea 11			
	iesi Cilielioli.	Bond strength 22 N (Helical coil)	[°C]	181
DOING SHENIGHT 22 M (HENCH CON)		Dona Strength ZZ N (trencal con)	[()	101
Breakdown voltage 1500 V (Twisted pairs)* [*C] 180		Breakdown voltage 1500 V (Twisted pairs)*	ſ . CJ	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.



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