

2. IMPREGNATING RESINS VUDAP/ Polyesterimide in diallylphtalate/ NHZ 94



CABLES



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Application:

Two - component trickle resin NHZ 94 is suitable for impregnation of the following appliances:

- Rotors of high speed machines
- Form wound stators, armatures and deep section windings
- Explosion proof electrical machines
- Standard motors, special machines and transformers

It is suitable up to thermal class H according to IEC - Publication 216. Windings impregnated with trickle resin NHZ 94 provide an excellent reliability of machines in reversing operation, very good resistance to tropical climates, and to solvents, acids, oils, freons and radioactivity. It is two component resin. Before use it have to be mixed with initiator Z 83 in mass ratio 100:2.

Description:

Chemical base of trickle resin is solution of unsaturated polyester resin in diallylphtalate. Its cure time is about 20-30 min. at 150 –160 °C.

Processing data:

Density (DIN 53 217)	25 °C	[kg/m ³]	1130 – 1180
Flow time(DIN Becher 4)	25 °C	[s]	110 – 150
	40 °C		
Viscosity	25 °C	[mPa.s]	600 – 800
	40 °C		
Shelf- life	max. 25 °C	[months]	min. 12
Flash point (Cleveland)		[°C]	145
Vapour pressure	25 °C	[mbar]	0,0013
	100 °C		
Gel-time 1	100 °C	[min]	8 – 9
	120 °C		
	130 °C		
Pot- life	Max.25 °C	[month]	2
Reaction time ^{2,3}	120 °C	[min]	3-4
Maximum temperature ^{2,3}	120 °C	[°C]	200-210
Curing time ⁴	150 °C	[min]	30
Effect of varnish on enamelled wires ⁵ after 60 min at 70oC		Decrease of pencil hardness	0-1



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Properties after cure:

			NHZ 94
Curing in thick layer ^{2,6}			I. 1.1.1. O. 1.1.1.
Curing of test specimen	150 °C	h	1
Dielectric strength ⁷	23 °C	kV/mm	120 – 140
Volume resistance ²	23 °C	[Ω .m]	10 ¹⁴
	155 °C	[Ω .m]	10 ¹¹
	180 °C	[Ω .m]	10 ¹⁰
	after immersion in water for 4 days	[Ω .m]	10 ¹³
Twisted coil test ⁸	23 °C	N	300 – 350
	155 °C	N	120 – 150
	180 °C	N	70 – 100
Helical coil test ⁸	23 °C	N	180 – 200
	155 °C	N	100 – 120
	180 °C	N	60 – 90
Glass transition temperature	(T _g)	°C	145
Thermal endurance ⁹ , Test criterion:	Bond strength 22 N (Helical coil)	°C	188
	Breakdown voltage 700 V (Twist)	°C	185
Thermal endurance ¹¹ Test criterion:	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 ASTM D 2471-71

4. After the winding has reached 150 °C

5. STN 67 3150 čl. 11, met. B after 60 min at 70 °C

6. 4 h at 100°C + 1,5 h at 110°C + 2 h at 120°C

7. NEMÁ Standard RE 2 - 1987

8. IEC 61033

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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