

Veropal 590-1K4

Electro coating

DESCRIPTION

Veropal 590-1K4 is medium viscosity liquid one-component epoxy system with relatively high reactivity.

USAGE

The system is designed for impregnation and winding. Veropal 590-1K4 is very stable one-component solventless epoxy system. Its low viscosity allows excellent penetration into the coil at room temperature. This resin is particularly suitable for low and medium voltage motor in the industrial for alternators or for transformers. After curing has Veropal 590-1K4 excellent dielectric and mechanical properties and outstanding chemical resistance.

PRODUCT PROPERTIES

Viscosity at 25 °C	3000 - 5500	mPa.s	EN ISO 12058-1
Viscosity at 40 °C	400 - 800	mPa.s	EN ISO 12058-1
Density at 25 °C	1.1 – 1.3	g/ cm ³	CSN EN ISO 1675
Appearance	yellow	-	-
Epoxy index	5.6 – 6.0	eq/ kg	EN ISO 3001
Epoxy equivalent weight	166 - 179	g/ mol	EN ISO 3001
Flash point	> 200	°C	ISO 1523

Gel time at 110 °C (30 g)	90	min.
Gel time at 130 °C (30 g)	15	min.
Gel time 0,15 mm thickness at 160°C	2.5 – 3.5	hour
Pot life at 100 °C	1	hour
Pot life at 80 °C	10	hour

Properties of cured system

Colour		yellow
Thermal class	ASTM D2307 /20 000 hours	H
Tg (DSC)	ISO 11357-2	120 -130 °C
Hardness Shore D	DIN 53505	85 -90
Tensile Strength	ISO 527	60 -70 MPa
Elongation at Break	ISO 527	3 – 5 %
Flexural Strength	ISO 178	100 – 110 MPa
E-modul Flexural	ISO 178	3 200 – 3 800 MPa
Coefficient of linear thermal expansion Temperature 20 - 80°C	ISO 11359-2	40 – 60.10 ⁻⁶ K ⁻¹
Thermal Conductivity	ISO 8894-1	0.2 – 0.25 W/mK
Water absorption (specimen: 50x50x4 mm) 10 days at 23°C 60 min at 100°C	ISO 175	0.15 – 0.20 0.20 – 0.25
Breakdown strength	IEC 60243-1	18 – 20 kV/mm
Volume resistivity	IEC 93	>10 ¹³ Ω/cm
Comparative Tracking Index	IEC 112	>550 V

PROCESSING

The system is designed for impregnation at atmospheric pressure, under vacuum or at elevated pressure.

Impregnation can be carried out at elevated temperature. The maximum temperature of the pre-heated coils or windings is 90 ° C.

After impregnation, the excess system is allowed to drain at a temperature up to 80 ° C.

The minimum cure temperature is 160 ° C for 4 hours.

Cure time is a function of temperature and size.

PACKAGING

The product is supplied in 1 or 5 l cans (or according to customer requirements).

STORAGE

Product should be stored in a covered, dry and dark place. The temperature of storage and transport should not be below 15 °C or above 25 °C. Under these conditions the expected shelf life is 12 months.

SAFETY DATA

Detailed information is contained in the MSDS.

REMARKS

Information about product properties and application procedures has been obtained by laboratory measurements and application tests. This Information Sheet presents only legally non-obligatory recommendations and product application methods must be in conformity with particular conditions. For all further information you can always contact us.

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The Quality Management System conforms to the Standard ISO 9001

