

DuPont™ Voltatex® 8600 C

TECHNICAL DATA SHEET

Chemical base: Polyamide

Voltatex® 8600 C represents a class thermoplastic bonding wire enamel based on polyamide resin with different solid contents such as Voltatex® 8611 C and Voltatex® 8616 C.

Voltatex® 8600 C bonding wire enamel can be applied to polyurethane or polyesterimide base coats.

Voltatex® 7200 is commonly used as a base coat. Wound coils of such magnet wire may be bonded by resistance heating, solvents, heating in an oven or by hot air during the winding process. Minimum temperature for bonding is 140 °C, but optimum bond strength requires a temperature above 170 °C.

Self-bonding magnet wire is required for example in self-supporting coils e.g. TV yoke coils, coils for electrical brakes, windings in small motors etc.

Use of self bonding magnet wire

When a coil of this wire is heated either in an oven or by resistance heating the jacket softens and the adjacent turns are fused together.

Enamelling technology

Voltatex® 8600 C can be used as bond coat for wire sizes from approx. 0.03 mm up to approx. 2.00 mm. The enamel can be supplied at different viscosities and solid contents as listed below in table 1 to fulfil specific machine and application requirements.

Table 1: Standard parameters

	Voltatex® 8611 C	Voltatex® 8616 C
solid content (1g, 1h, 180 °C)	11 % ± 1 %	16 % ± 1 %
flow time (4 mm, 23 °C) ISO 2431	30 s – 40 s	100 s – 150 s
viscosity at 25 °C DIN 53015	approx. 140 mPa·s	approx. 500 mPa·s
diluent	Voltatex® 9968	Voltatex® 9968

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Table 2: Enamelling conditions

bonding wire enamel	Voltatex® 8611 C
base coat	Voltatex® 7200
recirculating air oven	2.4 m, horizontal
application	felt, 4 passes (for Voltatex® 8600 C)
oven temperature	450 °C (for Voltatex® 8600 C)
conductor diameter	0.315 mm
enamelling speed	50 m/min
increase in diameter	29 µm + 17 µm

Table 3: Test results

baking conditions	1 h at 170 °C
bond strength	2.2 N
resoftening temperature	210 °C

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