

DuPont™ Voltatex® 6300

TECHNICAL DATA SHEET

Chemical base: Polyurethane

Voltatex® 6300 represents a class of polyurethane based wire enamels for the production of solderable magnet wires with different solid contents such as Voltatex® 6329 and Voltatex® 6335 Gold.

Voltatex® 6300 can be applied in the diameter range preferably from approx. 0.02 mm up to approx. 0.80 mm, single and heavy build. Application is possible by all convection or recirculating air ovens both horizontal and vertical type.

Magnet wires coated with Voltatex® 6300 meet the requirements and technical conditions of IEC 60317-51.

Voltatex® 6300 is listed in UL file E102069.

Enamelling technology

The main feature of Voltatex® 6300 is the excellent solderability at temperature ≥ 320 °C and low solder time. Voltatex® 6300 is formulated for both felt and dies application.

Pin-hole and crazing resistance to Japanese standards is a major feature of magnet wires enamelled with Voltatex® 6300.

Voltatex® 6300 can be supplied at different viscosities and solid contents as listed below in table 1 fulfil specific machine and application requirements.

Table 1: Standard parameters

	Voltatex® 6329	Voltatex® 6335 Gold
solid content (1g, 1h, 180 °C)	29 % \pm 1 %	35 % \pm 1 %
flow time (4 mm, 23 °C) ISO 2431	20 s – 30 s	80 s – 110 s
viscosity at 25 °C DIN 53015	approx. 100 mPa·s	approx. 320 mPa·s
diluent	Voltatex® 9968	Voltatex® 9968

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Table 2: Enamelling conditions

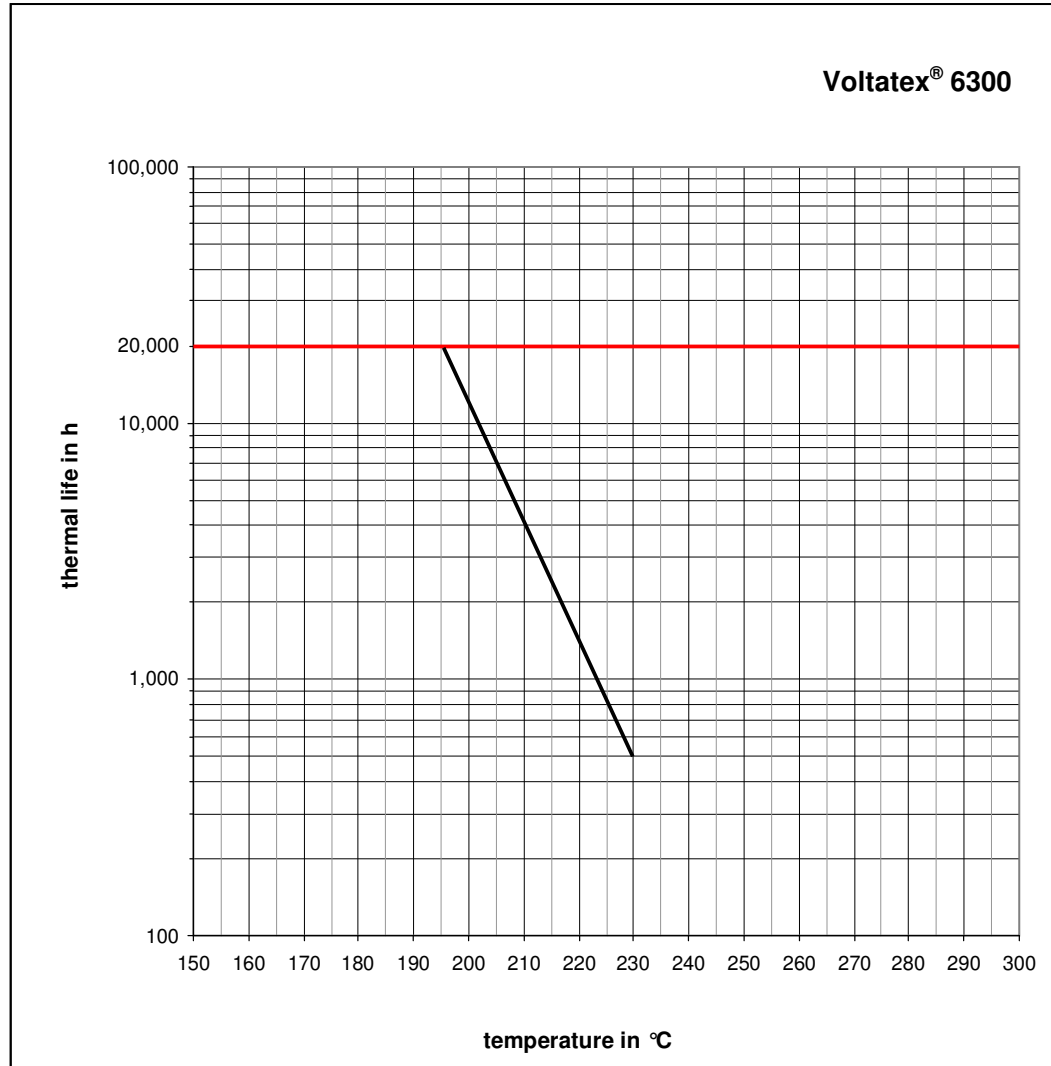
wire enamel	Voltatex® 6329
recirculating air oven	3 m, horizontal
application	felt, 8 passes
oven temperature	480 °C
conductor diameter	0.30 mm
enamelling speed	100 m/min
increase in diameter	39 µm

Table 3: Test results

flexibility and adherence, mandrel test 1 x d with pre-stretching of	20 %
heat shock: 1xd, 30 min., 2xd, 30 min.	190 °C 220 °C
cut-through temperature: tested	230 °C
Solderability at 320 °C Solderability at 375 °C (Sn/Pb = 60/40)	4.4 s 0.9 s
resistance to solvents, given as pencil hardness: as delivered IEC standard solvent DuPont™ Voltatex® impregnating varnishes DuPont™ Voltatex® UP-impregnating resins DuPont™ Voltatex® EP-impregnating resins	4 H 4 H 4 H 4 H 4 H
dielectric breakdown voltage, twisted pair: at room temperature	7,310 V
dissipation factor tan δ-intersection point	144 °C
temperature index acc. to ASTM D 2307, 20,000 h value (figure 1)	TI/195

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