

# DuPont™ Voltatex® 6100

## TECHNICAL DATA SHEET

### Chemical base: Polyurethane

Voltatex® 6100 represents a class of wire enamel based on polyurethane resin for the production of solderable magnet wires with different solid contents such as Voltatex® 6125 and Voltatex® 6129.

Voltatex® 6100 can be applied preferably in the diameter range from 0.01 mm up to 0.60 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® 6100 meet the requirements and technical conditions of IEC 60317-20.

**Voltatex® 6100 is listed in UL file E102069.**

### Enamelling technology

The main feature of Voltatex® 6100 is the excellent solderability at temperature  $\geq 320$  °C, low solder time and high application speed. Voltatex® 6100 is formulated for both felt and dies application.

Voltatex® 6100 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® 6125	Voltatex® 6129
solid content (1g, 1h, 180 °C)	25 % $\pm$ 1 %	29 % $\pm$ 1 %
flow time (4 mm, 23 °C) ISO 2431	15 s – 21 s	20 s – 28 s
viscosity at 25 °C DIN 53015	approx. 30 mPa·s	approx. 90 mPa·s
diluent	Voltatex® 9968	Voltatex® 9968

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**Table 2: Enamelling conditions**

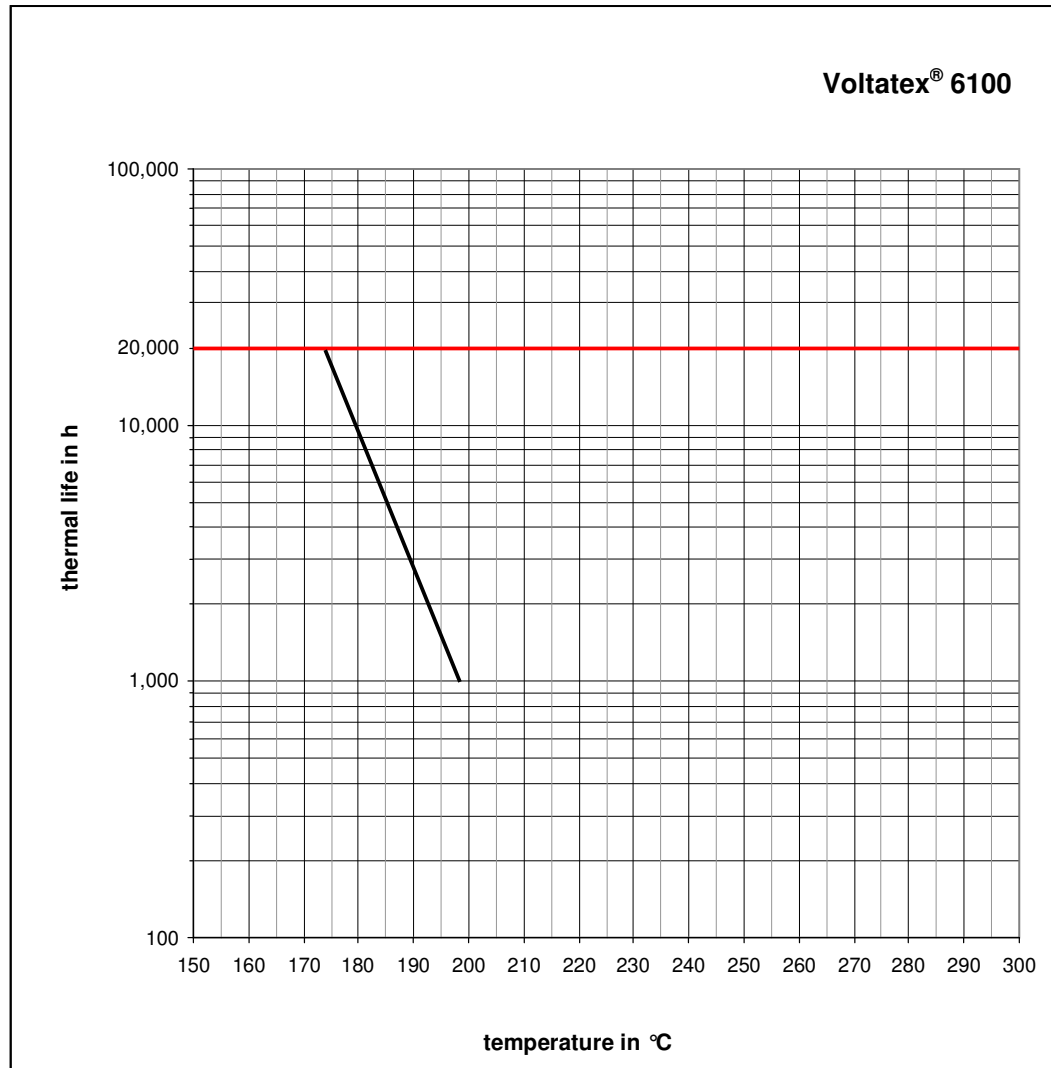
wire enamel	<b>Voltatex® 6129</b>
recirculating air oven	3 m, horizontal
application	felt, 8 passes
oven temperature	480 °C
conductor diameter	0.30 mm
enamelling speed	100 m/min
increase in diameter	33 µm

**Table 3: Test results**

flexibility and adherence, mandrel test 1 x d with pre-stretching of	15 %
heat shock: 1xd, 30 min.	185 °C
cut-through temperature: tested	220 °C
Solderability at 320 °C Solderability at 375 °C (Sn/Pb = 60/40)	4.0 s 0.9 s
resistance to solvents, given as pencil hardness:	
as delivered	3 H
IEC standard solvent	3 H
DuPont™ Voltatex® impregnating varnishes	3 H
DuPont™ Voltatex® UP-impregnating resins	3 H
DuPont™ Voltatex® EP-impregnating resins	3 H
dielectric breakdown voltage, twisted pair:	
at room temperature	7,320 V
at 155 °C	7,048 V
dissipation factor tan δ-intersection point	142 °C
temperature index acc. to ASTM D 2307, 20,000 h value (figure 1)	TI/174

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