

# DuPont™ Voltatex® 6500

## TECHNICAL DATA SHEET

### Chemical base: Polyurethane, modified

Voltatex® 6500 represents a class of modified polyurethane based wire enamel for the production of solderable magnet wires with different solid contents such as Voltatex® 6534 and Voltatex® 6537.

Voltatex® 6500 can be applied in the diameter range preferably from approx. 0.02 mm up to approx. 1.80 mm single and heavy build. Application is possible by all convection or recirculating air ovens both horizontal and vertical type.

Voltatex® 6500 fulfils the requirements for thermal class 200 both for temperature index and heat shock.

Pin-hole and crazing resistance according to Japanese standard is a major feature of magnet wires enamelled with Voltatex® 6500.

**Voltatex® 6500 is listed in UL file E102069.**

### Enamelling technology

Voltatex® 6500 enamelled magnet wires are characterised by an excellent solderability. Modified polyurethane resin-based enamel can be applied by dies or felt.

Voltatex® 6500 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® 6534	Voltatex® 6537
solid content (1g, 1h, 180 °C)	34 % ± 1 %	37 % ± 1 %
flow time (4 mm, 23 °C) ISO 2431	100 s – 130 s	
viscosity at 25 °C DIN 53015	approx. 500 mPa·s	800 mPa·s – 1,000 mPa·s
diluent	Voltatex® 9968	Voltatex® 9968

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**Table 2: Enamelling conditions**

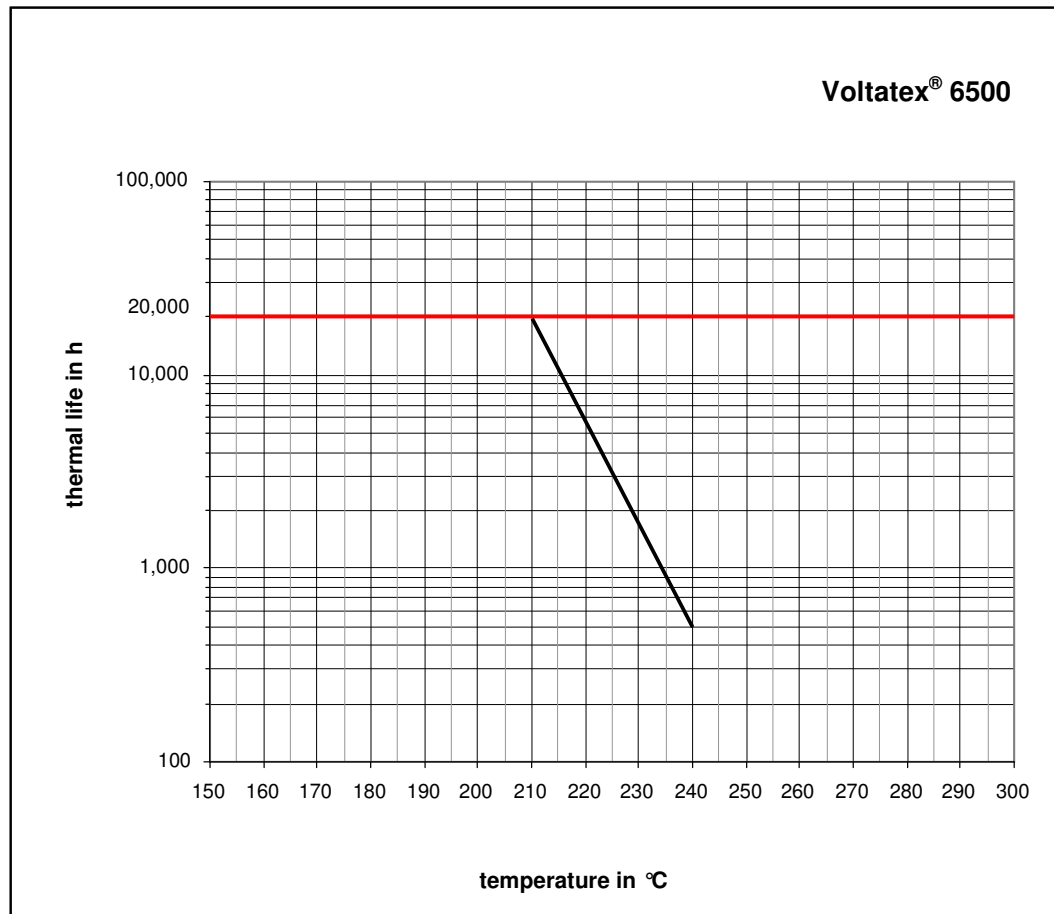
wire enamel	<b>Voltatex® 6534</b>
recirculating air oven	4 m, horizontal
application	dies, 8 passes
oven temperature	500 °C
conductor diameter	0.65 mm
enamelling speed	45 m/min
increase in diameter	58 µm

**Table 3: Test results**

flexibility and adherence, mandrel test 1 x d with pre-stretching of	15 %
heat shock: 1 x d, 30 min., 3 x d prestretching 20 %	190 °C 220 °C
cut-through temperature: tested	240 °C
pin-hole-resistance acc. to JIS C 3003	passes
solderability at 375 °C, (Sn/Pb= 60/40) solderability at 390 °C, (Sn/Pb= 60/40)	1.8 s 1.4 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	8,540 V
dissipation factor tan δ-intersection point	174 °C
temperature index acc. to ASTM D 2307, 20,000 h value (figure 1)	TI/210

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