Voltatex® 7145 A

Thermal class 220 (H) with PAI - Topcoat

Chemical base
Voltatex® 7145 A is based on a THEIC- modified polyester resin.

Specific characteristics and particular benefits
Magnet wires insulated with Voltatex® 7145 A and a PAI as Topcoat combine a high degree of thermal rating with excellent mechanical properties. Additional typical properties are good chemical resistance and a high level of flexibility.
In order to achieve increased resistance to chemicals, an application combined with polyamideimide based topcoat (e.g. Voltatex® 81.., Voltatex® 82.., Voltatex® 83.. or Voltatex® 85..) is possible.
Combined with other Voltatex® wire enamel products Voltatex® 7145 A is usable for wires acc. IEC 60317-13 and ANSI/NEMA MW 35-C, MW 73-C and MW 76-A-C.
Listed test results based on Axalta Coating Systems standards, following IEC standards 60851.

UL (Underwrites Laboratories)
Voltatex® 71..A with Voltatex® 8227 as a group of coat type followed by a numerical suffix to denote solid content is approved and listed in Underwrites Laboratories File E102069.

Fields of application
Voltatex® 7145 A is widely used on magnet wires for electrical motors, pump motors, refrigeration equipment, transformers, ballasts for fluorescent lamps and applications with special mechanical and chemical loads.

Processing
Voltatex® 7145 A can be applied in a wire diameter range from approx. 0.30 mm up to approx. 5.00 mm, single and heavy build by convection or recirculating air ovens, both horizontal and vertical types. Voltatex® 7145 A is formulated for dies application.

Health and Safety in processing and storage
We refer to the Material Safety Data Sheet (MSDS).

Solid content (1g, 1h, 180 °C)
44 – 46 %

Viskosity DIN 53015 (23°C / 73.4 °F)
1.600 – 2.000 mPas

Diluent
Voltatex® 9968

Minimum shelf life and storage conditions
6 month from date of packaging (between -10 and +40 °C)

Normal test conditions on pilot equipment with Voltatex® 8227 as Topcoat

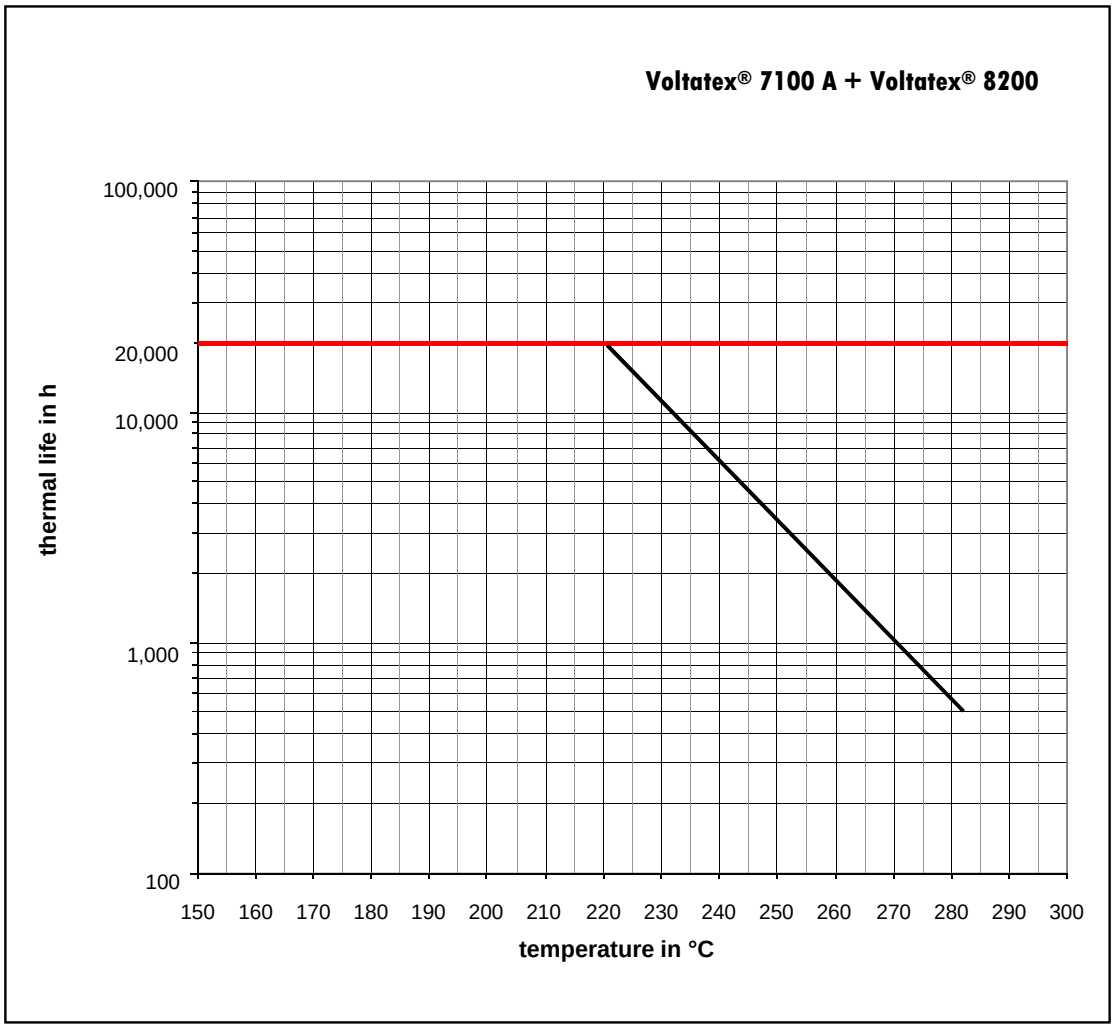
recirculating air oven	8 m, vertical
application	dies, 6 + 3 passes
oven temperature	550 °C
conductor diameter	1,00 mm
enamelling speed	45 m/min
increase in diameter (acc. DIN EN 60851)	55 µm + 15 µm (Grade 2)

Results (defined under normal test conditions on in house application lab equipment)

	IEC 60317-13 (*1)	In house testing (*2)	references from industry (*3)
flexibility and adherence, 1xd without cracks by applying a copper elongation of	0 %	15 %	>20 %
heat shock: el. 0%, 1xd, 30min.	-	240 °C	240 °C
heat shock: el. 0%, 2xd, 30min.	220 °C	-	-
cut-through temperature (Lüscher)	320 °C	400 °C	> 400 °C
resistance to abrasion	10,3 N	15,0 N	17.0 N
resistance to solvents, given as pencil hardness:			
• as delivered	H	4 H	4 H
• EC standard solvent	H	4 H	4 H
• Voltatex® impregnating varnishes	–	4 H	4 H
• Voltatex® UP-impregnating resins	–	4 H	4 H
• Voltatex® EP-impregnating resins	–	4 H	4 H
dielectric breakdown voltage, twisted pair	5,000 V	13,000 V	>14,000 V
resistance to transformer oil acc. to IEC 60851-4	passed	passed	passed
dissipation factor tan δ-intersection point (measured on DSE TD300)	–	≈ 170 °C ≈ 265 °C	165 – 180 °C 260 – 280 °C
temperature index acc. to ASTM D 2307, 20,000 h value (figure 1)	200	220	220
thermal class (°C)		220	

(*1) with reference to IEC 60317-0-1
(*2) application centre Wuppertal
(*3) depend on wire diameter and process conditions

Temperature index acc. to ASTM D 2307



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Information on use of IBC containers for supply of Axalta wire enamels

Composite IBCs consist of a plastic bottle surrounded by a metal housing or metal frame.

In these cases, Axalta Coating System is providing composite IBCs, which represent an approved industry standard solution, meet local regulations for shipping and comply with applicable requirements for electrostatic control for classified areas. However, in case of a fire incident, plastic bottles might melt, release flammable liquids and thus contribute to spreading the fire. Axalta Coating Systems will not accept any liability for damages of any nature whatsoever resulting from the impact of a fire incident on this kind of packaging.

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