



Voltatex[®] Wire Enamels

excellence in electrical insulations

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Axalta Voltatex®:

Know-how derived from experience

For more than 70 years, Voltatex® has been an international leader in developing modern insulation materials like Wire Enamels, Impregnating Resins and Core Sheet Varnishes. Since the invention of the first oil-free synthetic wire enamel in 1942, we have set an unparalleled quality standard, with the brand name Voltatex®. And it is the close cooperation with specialists in the international magnet wire industry which allows Voltatex® to constantly contribute to the development of new technologies and manufacturing processes and adapt the product portfolio to the increasing market requirements.

Wire is not Wire

Enamel-insulated copper and aluminium wires are mainly used in windings of electric motors, transformers, generators or electric measuring devices. Depending on the area of application the wire sizes vary. On the one hand the diameter of fine wires used for electronic components of watches for instance, can be thinner than the one of a human hair. On the other hand, in heavy duty motors such as wind generators, the diameter or width of round or flat wires can measure up to several millimeters.

Wires insulated by Wire Enamels

The electric insulation of copper and aluminium wires is provided by enamels which are applied in up to 40 layers to avoid a short circuit of the windings. Moreover, these Wire Enamels have to fulfill additional requirements - they must present a high chemical and thermal resistance, a proper adhesion to copper as well as an outstanding mechanical stability. When used in converter-driven electric motors, the insulation layer has to resist possible partial discharges in order to avoid a short circuit and thus a motor failure.

Voltatex® products meet the EU-directives

- 2003/11/EU (polybrominated diphenyl ether)
- 2006/121/EU (REACH directive) and contains no material according to Art 57/Annex XIV 1907/2006/EG
- 2011/65/EU (RoHS directive)

Voltatex® Range of Wire Enamels:

- Polyurethane Wire Enamels allow the production of directly solderable insulated wires, with short soldering times at 320°C for thermal class F (155°C) and 375°C for thermal class 200 (200°C)
- Heat resistant Polyester imide Wire Enamels for the production of magnet wires solderable at 470°C
- Highly heat-resistant THEIC Polyester imide Wire Enamels with very good mechanical, electrical, chemical and thermal characteristics
- Voltron® Wire Enamels developed for use in inverter driven motors offer superior long-term resistance to corona
- Polyamide imide Wire Enamels with excellent mechanical strength and chemical resistance
- Polyamide imide overcoat Wire Enamels with integrated lubricants for increased winding speed
- Self-bonding Wire Enamels to stabilize the winding based on Polyvinyl-butyril and Polyamide
- Polyvinyl formal Wire Enamels suitable for heavy round and rectangular conductors with high mechanical stability, excellent adherence to copper and resistance to transformer oil

