SynFlex Elektro GmbH
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SynTherm® YT511 (metastar® YT511)

SynTherm® YT511 is a synthetic electrical insulating paper consisting of a non-calendered, aromatic polyamide fibride flock composition.

Attributes

SynTherm® YT511 is a Class H (180 °C) insulating materials. Temperatures of up to 200 °C only slightly influence the electrical properties. The good mechanical properties can be extrapolated to significantly higher temperatures. Due to the polymer structure SynTherm® YT511 can also be used a low temperature of up to -190 °C. It has a very high short-term dielectric strength.
SynTherm® YT511 is compatible with all common classes of resins, varnishes, adhesives and transformer liquids, lubricants and cooling agents. Commonly used solvents may lead to minor, reversible expansion. SynTherm® YT511 paper is of low flammability (UL 94V-0) and very high resistance to beta and gamma radiation

Application

High-quality SynTherm® YT511 is used as electrical insulating material in almost any known application. Used in AC and DC motors, large generators, liquid-immersed and dry transformer, and chokes, even when exposed to beta and gamma radiation.

Standards

- Insulating material Class H (180 °C)
- UL listed (RTI mech. + electr. 210 °C)
- UL file no. E358562

Delivery forms

Film thickness in µm:
130, 180, 250, 380, 580
SynTherm® YT511 is available:
- tapes: depending on material thickness on request
Beginning at 6mm (thin materials)
- rolls: 1030 mm
Feathering:
- depth approx. 1 - 12 mm, distance approx. 1 - 10 mm
- 10 mm to 240 mm width, material thickness on request

Base

Non-calendered, aromatic polyamide flock composition

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Updated 10/18

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Typical mechanical properties	Unit of measure						Test standard
Nominal thickness	µm	130	180	250	380	580	
Typical thickness	µm	130	170	250	390	600	GB/T451.3-2002
Specific weight	g/m²	42	64	80	140	205	GB/T451.2-2002
Density	g/cm³	0.31	0.37	0.32	0.35	0.34	
Tensile strength longitudinal	N/cm	25	40	45	62	GB/T12914-2008	
Tensile strength transversal	N/cm	13	20	32	48	75	GB/T12914-2008
Elongation at break longitudinal	%	3.3	3.7	3.5	3.0	4.0	GB/T12914-2008
Elongation at break transversal	%	4.5	5.0	4.5	3.7	5.0	GB/T12914-2008
Shrinkage at 240 °C longitudinal	%	0.4	0.4	0.4	0.4	0.4	IEC60819-2:2002
Shrinkage at 240 °C transversal	%	0.2	0.2	0.2	0.2	0.2	IEC60819-2:2002
Elmendorf tear strength longitudinal	N	1.2	1.8	2.0	4.5	8.5	GB/T455-2002
Elmendorf tear strength transversal	N	1.8	3.0	3.5	7.0	9.0	GB/T455-2002
Tensile strength (unfold) transversal	N/mm²	115					

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Typical electrical properties	Unit of measure						Test standard
Nominal thickness	µm	130	180	250	380	580	
Field intensity	kV/mm	9	9	8	8	7	GB/T1408.1-2006
Dielectric constant at 60 Hz		1.3	1.3	1.3	1.4	1.4	GB/T1409-2006

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