
SynTherm® YT511 (metastar® YT511)

SynTherm® YT511 is a synthetic electrical insulating paper consisting of a non-calendered, aromatic polyamide fibrille 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

The information on this data sheet is based on the information provided by our supplier. It does not represent any specification or agreements regarding conditions or properties. The indicated values are standard values. Deviations from those values due to production and application cannot be excluded. The information on this data sheet is addressed to experts who use it at their own discretion and at their own risk. We do not guarantee results, or accept liability for the indicated specifications or for results obtained based on the specifications. Please contact us for more detailed information. Non-toxic and toxic substances are listed on the safety data sheet.
Updated 10/18

SynTherm® is a registered trademark of SynFlex.



| Typical mechanical properties | Unit of measure | | | | | | Test standard |
|--------------------------------------|-------------------|------|------|------|------|------|-----------------|
| Nominal thickness | µm | 130 | 180 | 250 | 380 | 580 | |
| Typical thickness | µm | 130 | 170 | 250 | 390 | 570 | GB/T451.3-2002 |
| Specific weight | g/m ² | 42 | 64 | 82 | 155 | 200 | GB/T451.2-2002 |
| Density | g/cm ³ | 0.31 | 0.37 | 0.32 | 0.39 | 0.35 | |
| Tensile strength longitudinal | N/cm | 25 | 40 | 60 | 145 | 170 | GB/T12914-2008 |
| Tensile strength transversal | N/cm | 13 | 21 | 32 | 68 | 85 | GB/T12914-2008 |
| Elongation at break longitudinal | % | 3.3 | 3.7 | 4.5 | 5.5 | 6.0 | GB/T12914-2008 |
| Elongation at break transversal | % | 4.5 | 5.0 | 5.5 | 6.5 | 7.0 | 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 |

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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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