Product datasheet SynTherm® YT56 DDP Page 1

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SynTherm® YT56 DDP

SynTherm® YT56 DDP is a synthetic medium density electro insulation paper constructed of a calendered, aromatic polyamide fibride flock composition. Both sides of the paper are printed with a B-stage epoxy resin in a diamond dotted pattern.

Attributes

The base material SynTherm® YT56 is a Class H (180 °C) insulating material. Its mechanical, thermal and electrical properties are between SynTherm® YT510 and SynTherm® YT511.

Temperatures over 200 °C only slightly influence its electrical properties. The good mechanical properties can be extrapolated to significantly higher temperatures. SynTherm® YT56 is also suitable for use at temperatures to -190 °C due to its polymer-structure.

It has a high short-term dielectric strength. SynTherm® YT56 is compatible with all classes of common resins, varnishes, adhesives as well as transformer liquids, lubricants, and cooling agents. Common solvents may lead to slight reversible moisture expansion. SynTherm® YT56 has low flammability (UL 94V-0) and very high resistance to beta and gamma radiation.

Application

SynTherm® YT56 DDP is designed for cost critical applications which require a moderate mechanical and electrical

SynTherm® YT56 DDP is used as layer insulation in transformers.

Standards

- Insulating material class F (155 °C). Base material class H (180 °C)
- The base material is UL listed (RTI mech. + electr. 210 °C)

Delivery forms

Film thickness in µm:

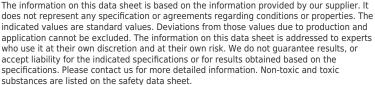
130, 180, 250, 300, 510, 760

SynTherm® YT56 DDP is available:

- in tapes: depending on material thickness on request
 - beginning at 6mm (thin material)
- in rolls: 1000 mm

Feathering:

- depth approx. 1 12 mm, distance approx. 1 10 mm
- 10 mm up to 240 mm tape-width, thickness on request







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| D | _ | _ | _ |
|---|---|---|---|
| п | М | S | E |

Calandered, aromatic polyamide fibride flock composition with diamond dotted B-stage resin on both sides.

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| Mechanical | Unit of measure | | | | | | |
|--|--------------------|-----|-----|-----|-----|------|-----|
| Nominal thickness | μm | 130 | 180 | 250 | 300 | 510 | 760 |
| Typical thickness | μm | 130 | 180 | 250 | 300 | 500 | 760 |
| Specific weight | g/m² | 86 | 125 | 172 | 245 | 342 | 532 |
| Tensile strength longitudinal | N/cm | 100 | 155 | 200 | 300 | 320 | 420 |
| Tensile strength transversal | N/cm | 40 | 60 | 80 | 145 | 150 | 200 |
| Elongation at break longitudinal | % | 8 | 9 | 9.5 | 12 | 11 | 10 |
| Elongation at break transversal | % | 8.5 | 9.5 | 10 | 13 | 11.5 | 10 |
| Elmendorf tear strength longitudinal | N | 1.5 | 2.5 | 3 | 5.5 | 11.5 | N/A |
| Elmendorf tear strength transversal | N | 3.5 | 5 | 6 | 7 | 14.5 | N/A |

| Mechanical | Unit of measure | Test method |
|-------------------|-----------------|----------------|
| Nominal thickness | μт | |
| Typical thickness | μm | GB/T12914-2008 |

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| Mechanical | Unit of measure | Test method |
|--------------------------------------|-----------------|----------------|
| Specific weight | g/m² | GB/T451.2-2002 |
| Tensile strength longitudinal | N/cm | GB/T12914-2008 |
| Tensile strength transversal | N/cm | GB/T12914-2008 |
| Elongation at break longitudinal | % | GB/T12914-2008 |
| Elongation at break transversal | % | GB/T12914-2008 |
| Elmendorf tear strength longitudinal | N | GB/T455-2002 |
| Elmendorf tear strength transversal | N | GB/T455-2002 |

| Properties of B-stage resin | Unit of measure | | | | | |
|-------------------------------------|--------------------|---------------------------------|-----|-----|-----|----|
| Thickness increase (one side) | μm | 10±15 % | | | | |
| Basic weight increase (both sides) | g/m² | 5±10 % | | | | |
| Curing conditions | h | 1 | 3 | 10 | 20 | 30 |
| Curing conditions | °C | 130 | 120 | 110 | 100 | 90 |
| Shelf life | | 6 months after production | | | | |

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| Electrical | Unit of measure | |
|-------------------|-----------------|-----|
| Nominal thickness | μm | 130 |
| Field intensity | kV/mm | 11 |

| Electrical | Unit of measure | | | | | | Test method |
|----------------------|--------------------|-----|-----|-----|-----|-----|-----------------|
| Nominal thickness | μm | 180 | 250 | 300 | 510 | 760 | |
| Field intensity | kV/mm | 11 | 12 | 15 | 13 | 13 | GB/T1408.1-2006 |

