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HOSTAPHAN®

Hostaphan® WN

Translucent white polyester film for electrical insulation

Hostaphan® WN is a white film made of polyethylene terephthalate (PET) and is well suited for electrical insulating of machines and appliances. The high dielectric strength and large volume resistance of Hostaphan® WN make it possible to use the film as a high-quality insulation material.

Typical properties

Property	Thickness μm	Units	Value		Test Method	Test Conditions
			MD	TD		
MECHANICAL						
Tensile strength	125-190 230, 250 300, 350	N/mm ²	190 200 190	230 200 190	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Elongation at break	125-190 230, 250 300, 350	%	200 200 230	140 190 200	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
THERMAL						
Insulation class in electrical engi- neering	125-350	-	B		DIN 57530 or VDE 0530, main list	-
Shrinkage	125-350	%	1.0	0.8	DIN 40634	150°C, 15 min.
PHYSICAL/CHEMICAL						
Conductivity of aqueous extract	125-350	μS/cm	2		DIN 40634 or VDE 0345	1kHz
Frigen extract	125-350	%	0.05		DIN 8944	Cold extraction
Trichloroethylene extract	125-350	%	0.20		DIN 8943	Extracted in Soxhlet apparatus for 2h. Boiled down for 15h at 105°C.
Density	125-350	g/cm ³	1.4		ASTM-D 1505-68 method C	23°C
ELECTRICAL						
Break down voltage	125 175 190 230-350 190 190	kV	22 28 30 > 30 80 26		DIN 40634 or VDE 0345 in air	23°C, 50 Hz 23°C, DC 150°C, 50 Hz
Dielectric dissi- pation factor (tanδ)	125-350	-	0.0020 0.0052 0.0048		DIN 40634 or VDE 0345 in air or ASTM-D 150	23°C, 50 Hz 23°C, 1 kHz 150°C, 50 Hz
Volume resistivity	190	Ω x cm	10 ¹⁸ 10 ¹²		DIN 40634 or VDE 0345 or ASTM-D 257	23°C, DC 150°C, DC



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Property	Thickness μm	Units	Value		Test Method	Test Conditions
			MD	TD		
Surface resistivity	190	Ω	$> 5 \times 10^{14}$ 1×10^{14} $> 1 \times 10^{12}$		DIN 53482 or VDE 0303/part 3 or ASTM-D 257	23°C, 25% r.h. 23°C, 50% r.h. 150°C, 75% r.h.
Dielectric constant	125-350	-	3.3 3.3 3.6		DIN 40634 or VDE 0345 in air or ASTM-D 150	23°C, 50 Hz 23°C, 1 kHz 150°C, 50 Hz
Behaviour under the influence of partial discharges	125-350	Min.	900		DIN 53485 or VDE 0303/part 7	Contact method 40KV/mm

MD = Machine direction, TD = Transverse direction

Applications:

- Insulation of winding heads
- Single phase insulation
- Slot insulation
- Ballasts

Corona discharges

With corona discharges on an electrical insulating material, each material has a characteristic resistance corresponding to its chemical and physical nature. The bombardment with ions resulting from the corona discharge causes damage which impairs the insulating effect once a specific alternating current (partial discharge inception voltage) is exceeded. The behaviour in the presence of corona discharges is the time in which the material properties have changed in a specific way under the influence of a set alternating current which is greater than the partial-discharge inception voltage.

Processing information

General

Hostaphan® WN can easily be processed with the polyester and epoxy resins commonly used in electronic and mechanical engineering. Resins containing amines or phenol must be checked for compatibility with Hostaphan® WN.

Forming

The film can be easily formed in both warm and cold states.

Lamination

Hostaphan® WN can be laminated to various materials.

Die cutting

Hostaphan® WN should be die cut using a shearing technique.

Deep drawing

Hostaphan® WN can be deep drawn up to 15 mm with a seal and a mould with the relevant sojourn time.



Delivery program Hostaphan® WN

Thickness μm	Yield		Roll length m	Roll diameter mm
	g/m²	m²/kg		
125	175	5.7	1 280	485
190	266	3.8	800	475
230	322	3.1	600	450
250	350	2.9	600	475
300	420	2.4	480	465
350	470	2.1	440	480

Other roll lengths on request. Core diameter: 152.4 mm (6")

Classification of insulating materials and temperature indices

Temperature	Class
< 90° C	Y
< 105° C	A
< 120° C	E
< 130° C	B
< 155° C	F
< 180° C	H
> 180° C	C

Hostaphan® WN is UL listed.

The properties shown in this technical data sheet only apply to the film itself. We cannot guarantee the properties of an intermediate or final product made from or using the film. Instead, the intermediate or final product must be subjected to standard industrial testing.

This data sheet reflects our state of knowledge at the time this was prepared. The purpose is to provide an overview of the characteristics of our products and their potential uses. The values given reflect the typical characteristics of the film. They are not specification limits. They are neither a guarantee of specific properties nor the suitability of products in specific applications. The user must observe industrial property rights, such as patents or trademarks. The quality of our products is covered by the terms of the General Conditions of Sale of MITSUBISHI POLYESTER FILM GmbH.