Hostaphan® WN

Translucent white film

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	Units	Value		Test Method	Test Conditions
	µm		MD*	TD*		
MECHANICAL						
Tensile strength	125 250 350	N/mm²	200 200 160	230 200 180	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Elongation at break	125 250 350	%	170 200 230	120 170 170	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
THERMAL						
Insulation class in electrical engineering	125-350	-	B		DIN 57530 or VDE 0530, main list	-
Shrinkage	125-350	%	1.0	1.0	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 Soxhalet apparatus for 2h. Boiled down for 15h at 105°C.
ELECTRICAL						
Dielectric strength	190	kV/mm	420 150 135		DIN 40634 or VDE 0345 in air or ASTM-D 149	23°C, DC 23°C, 50 Hz 150°C, 50 Hz
Dielectric dissipation 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

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Property	Thickness	Units	Value		Test Method	Test Conditions
	µm		MD*	TD*		
Volume resistivity	190	Ω x cm	10^{18} 10^{12}		DIN 40634 or VDE 0345 in air or ASTM-D 257	23°C, DC 150°C, DC
Surface resistivity	190	Ω	> $5x10^{14}$ $1x10^{14}$ > $1x10^{12}$		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 (partialdischarge 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. We will be pleased to advise suitable adhesives, machines and manufacturers.

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.

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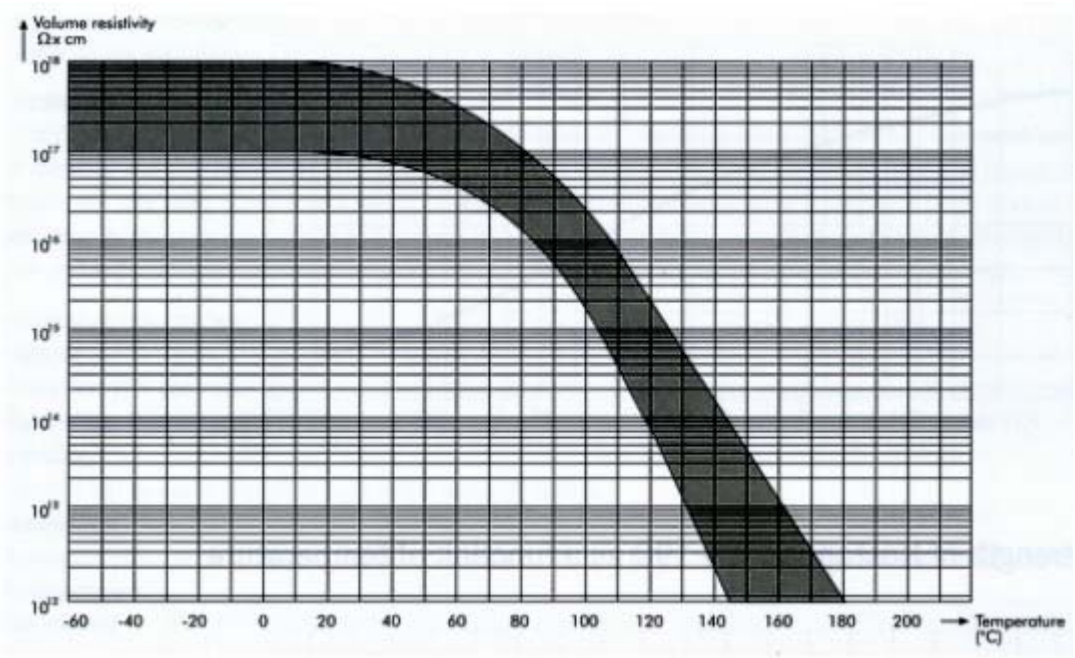
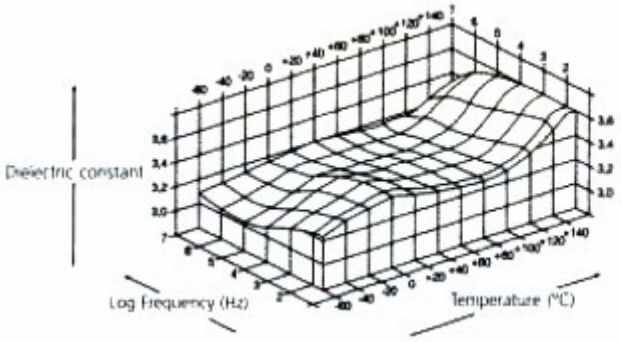
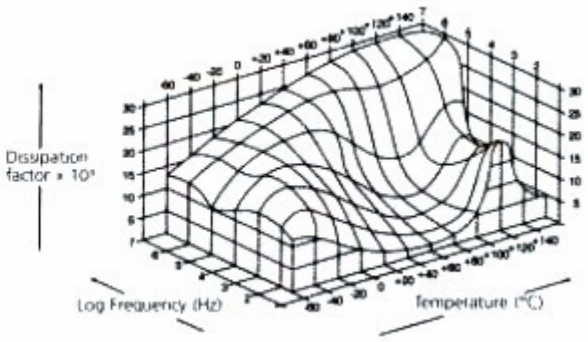
Electrical properties

Volume resistivity of Hostaphan® WN as a function of temperature







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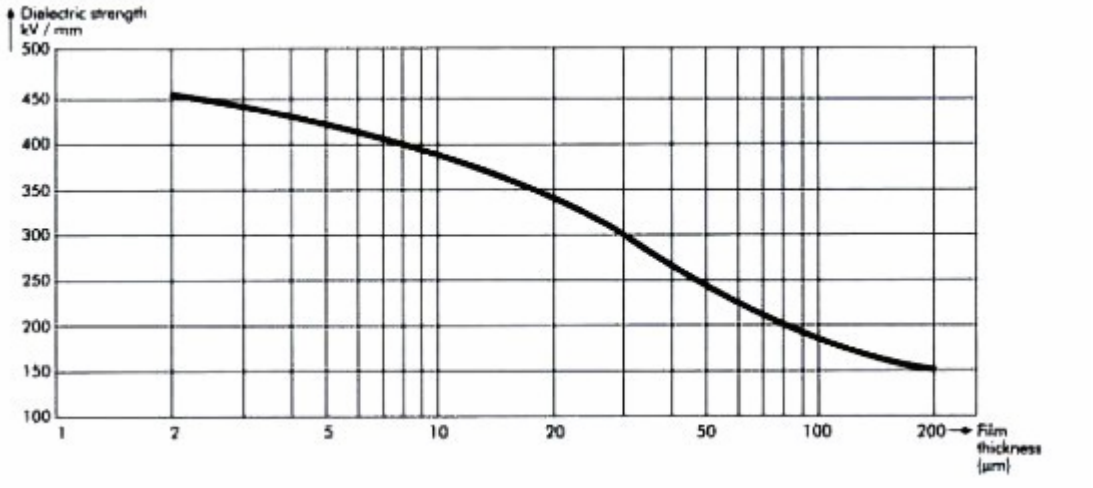
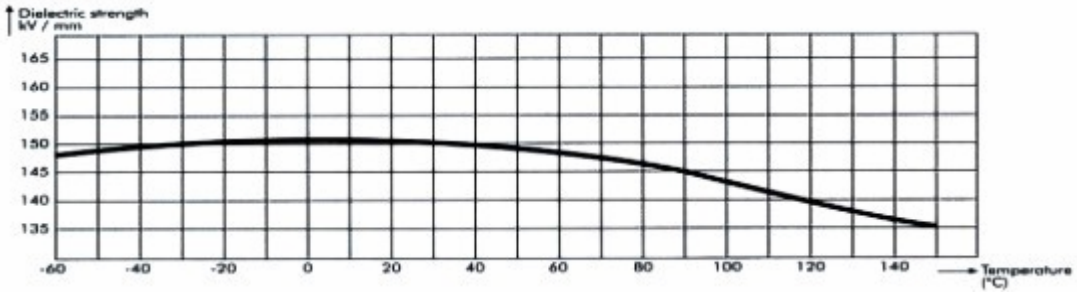
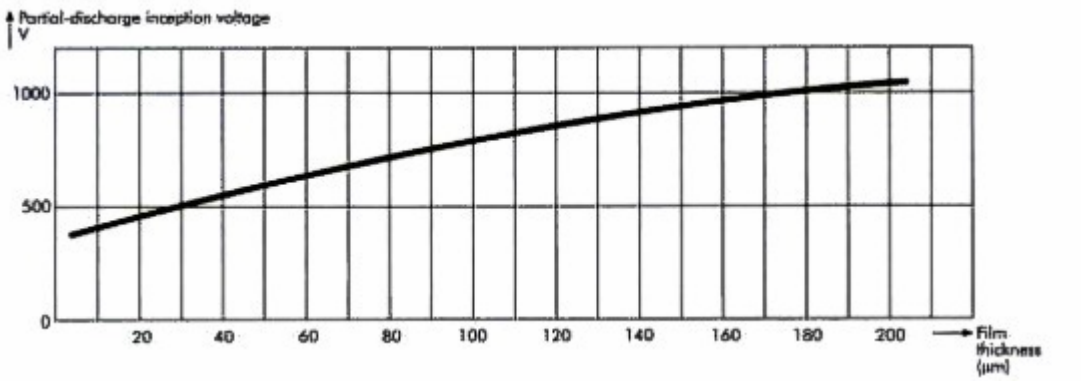
Dielectric strength of Hostaphan® WN as a function of film thickness



Dielectric strength of Hostaphan® WN 190 as a function of temperature



Partial-discharge inception voltage as a function of film thickness



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Delivery program Hostaphan® WN

Nominal Thickness µm	Yield g/m²	Yield m²/kg	Roll length m	Roll diameter mm
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.

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