



Hostaphan[®] RN 36-350

Universal film

Hostaphan[®] RN is a biaxially oriented film made of polyethylene terephthalate (PET) and characterized by outstanding physical properties.

Typical properties

Property	Thickness	Units	Value		Test Method	Test Conditions
			MD*	TD*		
	μm					
MECHANICAL						
Tensile strength	36-75 100-125 190-350	N/mm ²	210 180 150	260 230 200	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Elongation at break	36-75 100-125 190-350	%	150 185 200	110 120 140	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Young's Modulus	36-75 100-125 190-350	N/mm ²	4000 4100 3600	5200 4800 4300	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 1 %/min.; 23 °C, 50 % r.h.
F5-value (stress to obtain 5% elongation)	36-350	N/mm ²	105	105	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
THERMAL						
Shrinkage	36-190 250-350	%	1.0 1.0	0.3 1.0	DIN 40634	150°C, 15 min.
OPTICAL						
Haze	36 50 75 100 125 190 250 350	%		9 13 15 18 22 25 28 30	ASTM-D 1003-61 method A	Enlarged measurement angle
SURFACE						
Coefficient of friction (static)	36-350	-		0.4	DIN 53375 or ASTM-D 1894	-
PHYSICAL/CHEMICAL						
Density	36-350	g/cm ³		1.4	ASTM-D 1505-68 method C	23°C



Property	Thickness μm	Units	Value		Test Method	Test Conditions
			MD*	TD*		
Conductivity of aqueous extract	36-350	$\mu\text{S/cm}$	2		DIN 40634 or VDE 0345	1kHz
Water absorption (compared to dry state)	36-350	%	0.5		ASTM-D 570	4 days in water at 23°C
Frigen extract	190	%	0.05		DIN 8944	Cold extraction
Trichloroethylene-extract	190	%	0.2		DIN 8943	Extracted in Soxhlet apparatus for 2h. Boiled down for 15h at 105°C.
ELECTRICAL						
Dielectric strength	36/190	kV/mm	510/420 290/150 200/135		DIN 40634 or VDE 0345 in air	23°C, DC 23°C, 50 Hz 150°C, 50 Hz
Dielectric dissipation factor ($\tan\delta$)	36-350	-	0.0020 0.0052 0.0210 0.0060 0.0060 0.0048		DIN 40634 or VDE 0345	23°C, 50 Hz 23°C, 1 kHz 23°C, 1 MHz 23°C, 240 MHz 23°C, 9300 MHz 150°C, 50 Hz
Volume resistivity	36	$\Omega \times \text{cm}$	$> 10^{17}$ $> 10^{11}$		DIN 40634 or VDE 0345	23°C, DC 150°C, DC
Surface resistivity	36	Ω	$> 5 \times 10^{14}$ $> 5 \times 10^{14}$ $> 10^{12}$		DIN 53482 or VDE 0303/part 3	23°C, 25% r.h. 23°C, 50% r.h. 150°C, 75% r.h.
Dielectric constant	36-350	-	3.3 3.3 3.2 2.9 2.9 3.6		DIN 40634 or VDE 0345 in air	23°C, 50 Hz 23°C, 1 kHz 23°C, 1 MHz 23°C, 240 MHz 23°C, 9300 MHz 150°C, 50 Hz
BARRIER						
Air	36	$\text{cm}^3/\text{m}^2 \times \text{d} \times \text{bar}$	20		DIN 53380	23°C, 0% r.h.
Oxygen		$\text{cm}^3/\text{m}^2 \times \text{d} \times \text{bar}$	50		DIN 53380	23°C, 50% r.h.
Water vapour		$\text{g}/\text{m}^2 \times \text{d}$	5		DIN 53122	23°C, 85% r.h.
Nitrogen		$\text{cm}^3/\text{m}^2 \times \text{d} \times \text{bar}$	12		DIN 53380	23°C, 0% r.h.
Carbon dioxide		$\text{cm}^3/\text{m}^2 \times \text{d} \times \text{bar}$	180		DIN 53380	23°C, 0% r.h.

MD = Machine direction, TD = Transverse direction



Applications:

Films for industrial applications

- Coating
- Laminating
- Metallizing
- Printing

Decorative films

Gloss laminations

Adhesive tapes

Adhesive films

Insulation tapes

Electrical insulation

- Flexible printed circuits
- Transformers and coils

Reprography

- Base for color printing
- Carrier film for flexible printing plates
- Drafting film/engineering

Release

- Transfer film
- Film for production of cast films
- Film for production of GRP-products

Stiffening

- Collar stiffeners

Building insulation

Further applications

- Gaskets and gasket inserts
- Membranes
- Tape measures
- Soundproofing and thermal insulation in combination with suitable materials
- Drum skins
- Carrier film in veneer- and furniture presses

Delivery program Hostaphan® RN 36-350

Thickness	Thickness range	Yield		Roll length	Roll diameter	Roll length	Roll diameter
		g/m ²	m ² /kg				
µm	µm			m	mm	m	mm
36	± 2.0	50	20	4 000	465	8 000	635
50	± 2.5	70	14	3 200	485	6 400	670
75	± 3.5	105	9.6	2 000	475	4 000	650
100	± 5.0	140	7.2	1 600	485	3 200	670
125	± 6.5	175	5.7	1 280	485	2 560	670
190	± 10	266	3.8	800	475	1 600	650
250	± 12	350	2.9	600	475	1 200	650
350	± 14	490	2.0	440	480	880	655

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



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.

Hostaphan® RN is permitted for food contact according to the current version of EC Directive 2002/72/EC and FDA regulation 21 CFR 177.1630 under the conditions set out in our current Declaration of Compliance. Before using Hostaphan® RN in a food contact article, please request this Declaration of Compliance.

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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. It neither guarantees 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.