Hostaphan® KN

Film for cables

Hostaphan® KN is a biaxially oriented film made of polyethylene terephthalate (PET) and characterized by outstanding physical properties. Hostaphan® KN fulfils a number of important functions as a bundling film in cable and wire manufacture. The film is wrapped spirally or as a longitudinal sleeve around the cable.

Typical properties

Property	Thickness	Units	Value		Test Method	Test Conditions
	µm		MD*	TD*		
MECHANICAL						
Tensile strength	12 50 125	N/mm²	230 180 180	260 230 230	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Elongation at break	12 50 125	%	90 175 175	90 120 125	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Young´s Modulus	12 50 125	N/mm²	4 400 4 300 4 000	5 200 5 100 4 900	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)	12-125	N/mm²	110	110	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
THERMAL						
Low temperature resistance	12-125	°C	- 196		-	-
Thermal conductivity	12-125	w/m x k	0.13		VDE 0304 part 1	-
Melting point	12-125	°C	260		Differential-thermoanalysis	-
Shrinkage	12 36-125	%	1.3 1.0	0.1 0.3	DIN 40634	150°C, 15 min.
PHYSICAL/CHEMICAL						
Density	12-125	g/cm³	1.395		ASTM-D 1505-68 method C	23°C

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MITSUBISHI POLYESTER FILM Kasteler Str. 45 · D-65203 Wiesbaden · Tel. ++49/611/9626809 · Fax ++49/611/9629357

Property	Thickness	Units	Value		Test Method	Test Conditions
	µm		MD*	TD*		
ELECTRICAL						
Dielectric strength	12 50 125	kV/mm	510 380 460 240 420 160		DIN 40634 or VDE 0345 in air	DC AC, 50 Hz DC AC, 50 Hz DC AC, 50 Hz
Dielectric dissipation factor (tanδ)	12-125	-	0.0020		DIN 40634 or VDE 0345	23°C, 50 Hz
Volume resistivity	12 125	Ω x cm	10^{18} 10^{17}		DIN 40634 or VDE 0345	23°C, DC
Dielectric constant	12-125	-	3.3		DIN 40634 or VDE 0345 in air	23°C, 50 Hz

MD = Machine direction, TD = Transverse direction

Delivery program Hostaphan® KN

Thickness	Thickness range	Yield		Roll length	Roll diameter
µm	µm	g/m²	m²/kg	m	mm
12	± 0.5	17	60	16 000	530
15	± 0.5	21	48	11 200	500
19	± 0.8	27	38	9 200	500
23	± 1.0	32	31	6 400	470
36	± 2.0	50	20	4 000	465
50	± 2.5	70	14	3 200	485
75	± 3.5	105	9.6	2 000	475
100	± 5.0	140	7.2	1 600	485
125	± 6.5	175	5.7	1 280	485

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

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Mean reel diameter in widths up to 39.9 mm

Thickness µm	Standard length m	Mean reel diameter in mm Multiples of standard length: 1/1	2/1	4/1
12	4 000	270	370	510
15	2 800	255	345	480
19	2 300	260	355	490
23	1 600	240	325	450
36	1 000	240	325	445
50	800	250	340	470
75	500	245	330	455
100	400	250	340	470
125	320	250	340	470

Smallest available width

Thickness µm	Standard length m	Smallest available width in mm Multiples of standard length: 1/1	2/1	4/1
12	4 000	6	10	25
15	2 800	6	10	20
19	2 300	6	10	15
23	1 600	6	10	10
36	1 000	6	10	10
50	800	6	10	10
75	500	6	10	10
100	400	6	10	10
125	320	6	10	10

Hostaphan® KN for cable and wire manufacture

Hostaphan® KN fulfils a number of important functions as a bundling film in cable and wire manufacture. The film is wrapped spirally or as a longitudinal sleeve around the cable. When used as a longitudinal sleeve, the film tape runs parallel with the cable in the machine direction and is wrapped around the cable by a forming device. Immediately after this operation, the sheathing can be extruded at the same speed.

Processing aid

The individual cable bundles are held together with KN tapes to facilitate application of the sheathing. Owing to its very high tensile strength, KN can be processed at high tension, thus producing a compact cable bundle.

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Thermal barrier
Due to its high thermal stability (melting point 260 °C) and low thermal conductivity, KN is used in the extrusion of cable sheathing to protect the insulation beneath. The low thermal conductivity impedes rapid heat transfer and thus prevents the core insulations sticking together.

Plasticiser barrier
If the cable sheathing consists of plasticised PVC and the core insulation of normal rigid PVC, loss of plasticiser occurs. Some plasticiser migrates from the sheathing and thus reduces the flexibility of the cable as a whole. A thin covering of KN prevents plasticiser from migrating. KN is resistant and impermeable to all known plasticisers.

Moisture and corrosion protection
Hostaphan® KN is water-impermeable and corrosion resistant (A 1 in accordance with VDE 0303). As a bundling film, KN is good barrier against moisture and increases the corrosion resistance of metal sheathing. This is particularly important in the case of copper or aluminium sheathing. The film, together with the polymer compound, protects the cable from corrosion and moisture. The foam bonds firmly to these grades of film. In addition KN is well suited for waterproof cables protected with foam.

Mechanical protection
Due to its high tensile strength and abrasion resistance, Hostaphan® KN prevents core insulation from being damaged by hard wire mesh shielding. Hostaphan's® low coefficient of friction (50 %) increases the flexibility of the cable and minimizes damage due to flexing.

Insulation of individual strands
We recommend our white matt type of polyester film, Hostaphan® MP, as a separating layer between the insulator itself and the individual copper strands. This product makes it easier to see where the overlaps are, something which is difficult if colorless transparent film is used. The high flexibility of the cables is not affected and the outer sheath can be extruded over the film.

Electrical insulation
The high dielectric strength of Hostaphan® KN ensures safe and reliable electrical insulation. For example, it prevents broken conductors short-circuiting with adjacent shielding.

Supplier of
1. Cable identification tape and cable-integrated measuring tape:
BSA GmbH · Chemnitzer Str. 10 · 63110 Rodgau · Germany
Tel. ++49/6106/875170
Fax ++49/6106/875175

2. Static shield:
Stanniolfabrik Eppstein GmbH & Co. KG · Burgstr. 81 - 83 · 65813 Eppstein · Germany
Tel. ++49/6198/5720
Fax ++49/6198/32782

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