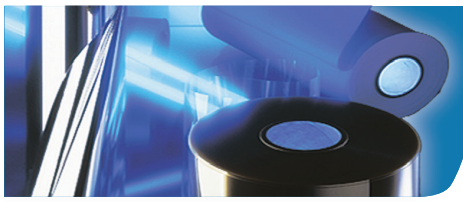

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Preliminary data sheet

Hostaphan® WUV

White, UV stable polyester film

Hostaphan® WUV is a white biaxial oriented film made of polyethylene terephthalate (PET). It is characterized by a very high resistance against UV radiation as well as a low light transmission, especially in the UV range of 200 to 390 nm. The film exhibits high mechanical strength and dimensional stability.

Typical properties

Property	*Thickness µm*	*Units*	*Value*		*Test Method*	*Test Conditions*
			MD	*TD*		
MECHANICAL						
Tensile strength	23 36-65	N/mm^2	170 170	240 255	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
Elongation at break	23 36-65	%	160 160	100 100	ISO 527-1 and ISO 527-3 Sample type 2	Test speed 100 %/min.; 23 °C, 50 % r.h.
THERMAL						
Melting point	23-65	°C	260		Differential-thermoanalysis	-
Shrinkage	23-65	%	1.0	1.0	DIN 40634	150°C, 15 min.
OPTICAL						
Transparency	23 36 50 55 65 23-65	%	43 33 28 27 25 0		ASTM-D 1003-61 method A	400-900 nm 400-900 nm 400-900 nm 400-900 nm 400-900 nm 250-360 nm
PHYSICAL/CHEMICAL						
Density	23-65	g/cm^3	1.46		ASTM-D 1505-68 method C	23°C

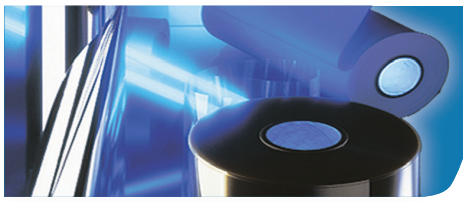
MD = Machine direction, TD = Transverse direction

UV transmission

	Hostaphan WUV® 23-65				
Wavelength in nm	250	300	360	390	400
Transmission in %	< 1	< 1	< 1	< 2	< 20

UV stability

For Hostaphan® WUV 23 / 36 and 50 weathering tests were conducted. Weathering of Hostaphan® WUV 50 was stopped after more than 22.000 h, with the film being still mechanically o.k. (elongation



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at break more than 5 %).
Hostaphan® WUV 36 survived 15.000 h and Hostaphan® WUV 23 more than 10.000 h mechanically.
Hostaphan® WUV shows a slight initial loss of whiteness and increase of yellowing with minimal change thereafter in the course of the test.
For comparison: our standard white film Hostaphan® WO 50 which also has a quite good weatherability shows a strong initial loss of whiteness and increase of yellowing and is destroyed mechanically after less than 8.000 h.

Other changes to be considered:
Hostaphan® WUV is getting more matt during weathering and depending on climate conditions there is a thickness erosion over time (typical for wet UV weathering tests).

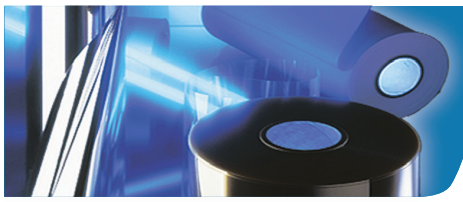
Test conditions:
Device: QUV/spray from Q-panel (UV fluorescence lamp)
Test cycle:
a) 4 h UVA irradiation at 60 °C
b) 5 min water spray while irradiated
c) 4 h condensation at 50 °C
d) back to a)
Irradiation intensity = 0.89 W/m2/nm at 340 nm.

All data applies for the film only. Any final product has to be tested separately.

Delivery program Hostaphan® WUV

Thickness	*Yield*		*Roll length*	*Roll-diameter*
µm	*g/m²*	*m²/kg*	*m*	*mm*
23	34	30	On request	On request
36	52	19		
50	73	13.5		
55	80	12.5		
65	95	10.5		

Core diameter: 152.4 mm (6”)



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Please note that when Hostaphan® WUV is combined with other materials or articles, the performance of the final product depends on all components and the geometry. Rigorous qualification and safety testing of the final product is always necessary, as unexpected interactions could occur.

This Hostaphan® film is permitted for food contact according to the current version of EU Regulation 1935/2004 and 10/2011 as well as FDA regulation 21 CFR 177.1630 under the conditions set out in our current Declaration of Compliance. Before using this Hostaphan® film in a food contact article, please request this Declaration of Compliance.

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.

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