



# barrier films

## PERLALUX® – Tristar ultra

Our latest innovative composite film has a new PVdC barrier layer and groundbreaking process technology for the highest demands on water vapour, oxygen and aroma permeability. The excellent protective properties of Tristar ultra are especially suited for hygroscopic products and for use in demanding climate zones.

The films combine a newly developed material structure and process technology, in accordance with GMP standards. The coating process uses a multi-layer technology with five coating stations, certified manufacturing processes and validated test procedures.

As a result of the choice of a specific base film and of the coating formulation, our Tristar ultra films have excellent thermo-forming properties and are suitable

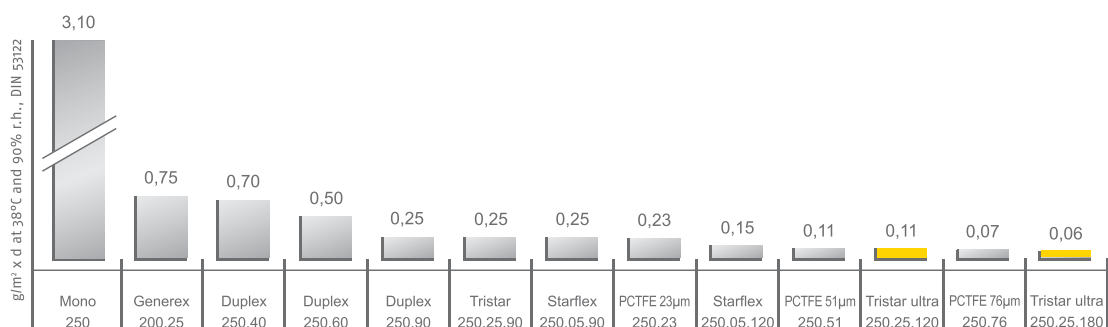


for standard blister designs to the most complex mould configuration.

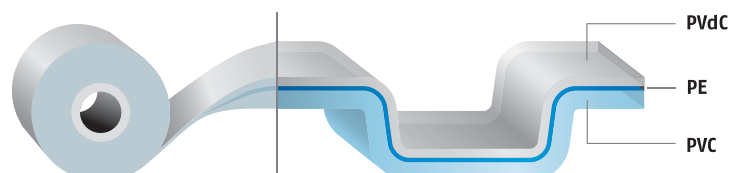
In terms of physical properties, protection and physiological harmlessness, our PERLALUX® – Tristar ultra films comply with all the latest international guidelines, directives and standards for pharmaceutical packaging materials.

PERLALUX® – Tristar ultra is available in transparent, opaque or colours, optional with UV light protection.

### Water vapour transmission rate (WVTR)



### Cross-section



## Technical data for the standard products

Characteristics	250.25.120	250.25.180	Test method
Total weight [g/m <sup>2</sup> ]	481	541	DIN 53352
Total thickness [μm]	346	382	DIN 53370
Thickness PVC [μm]	250	250	DIN 53370
Thickness PE [μm]	25	25	DIN 53370
Coating weight PVdC [g/m <sup>2</sup> ]	120	180	DIN 53352
Bond strength [N/60 mm]	35	35	AAU 9200.304
Shrinkage [%/140°C, 10 min]	- 6	- 6	DIN 53377
<b>Barrier Values</b>			
WVTR [38°C, 90% r.h.] [g/m <sup>2</sup> x d]	0.11	0.06	ASTM F 1249
WVTR [40°C, 75% r.h.] [g/m <sup>2</sup> x d]	0.11	0.06	ASTM F 1249
O <sub>2</sub> -Barrier [23°C, 50% r.h.] [cm <sup>3</sup> /m <sup>2</sup> x bar x d]	0.40	0.30	ASTM D 3985










Other combinations (PVC gauges) are available.

r.h. = relative humidity

The figures given are reference values for standard executions and correspond to our current knowledge. No liability may be inferred for results that may be obtained in the application of our products.

## PERLALUX® – Full Range of Blister Films

International Registrations: FDA, USA (registered DMF No. 10686 and 9072) as well as SFDA (Chinese State Food and Drug Administration) our films comply with all the current international guidelines, directives and standards for pharmaceutical packaging materials.

	Structure	Coating	WVTR Barrier	O <sub>2</sub> Barrier
PERLALUX® – Mono	 PVC	–	Δ	Δ
PERLALUX® – Generex	 PVdC PVC	25g/m <sup>2</sup> PVdC	ΔΔ	ΔΔΔ
PERLALUX® – Duplex	 PVdC PVC	40g/m <sup>2</sup> PVdC 60g/m <sup>2</sup> PVdC 90g/m <sup>2</sup> PVdC	ΔΔ ΔΔ ΔΔΔ	ΔΔΔ ΔΔΔΔ ΔΔΔΔ
PERLALUX® – Tristar	 PVdC PE PVC	40g/m <sup>2</sup> PVdC 60g/m <sup>2</sup> PVdC 90g/m <sup>2</sup> PVdC	ΔΔ ΔΔ ΔΔΔ	ΔΔΔ ΔΔΔΔ ΔΔΔΔ
PERLALUX® – Starflex	 PVdC TE PVC	90g/m <sup>2</sup> PVdC 120g/m <sup>2</sup> PVdC	ΔΔΔ ΔΔΔΔ	ΔΔΔΔ ΔΔΔΔΔ
PERLALUX® – Tristar ultra	 PVdC PE PVC	120g/m <sup>2</sup> PVdC 180g/m <sup>2</sup> PVdC	ΔΔΔΔΔ ΔΔΔΔΔ	ΔΔΔΔΔ ΔΔΔΔΔ
PERLALUX® – PCTFE	 PVC PCTFE	PCTFE 23μm PCTFE 51μm PCTFE 76μm	ΔΔΔΔ ΔΔΔΔΔ ΔΔΔΔΔ	Δ Δ Δ
PERLALUX® – Suppo	 PVC / PE PVC / PVdC / PE	– 40g/m <sup>2</sup> PVdC	Δ ΔΔ	Δ ΔΔΔ
PERLALUX® – Liquid	 PE PVdC PVC	40g/m <sup>2</sup> PVdC	ΔΔ	ΔΔΔ

Δ low standard  
ΔΔ middle standard  
ΔΔΔ high standard  
ΔΔΔΔ very high standard  
ΔΔΔΔΔ extremely high standard

Other types available on request.