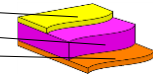


Non treated skin layer (OUT) with very low coefficient of friction and medium heat sealing threshold  
Transparent oriented modified polypropylene  
Non treated skin layer (IN) with a bit higher coefficient of friction and medium heat sealing threshold



**DESCRIPTION:**

Transparent heat shrinkable BOPP film with a wide heat sealing range and water barrier and low coefficient of friction specially designed for cigarette carton packs and blocks overwrapping in high speed machines.

Properties		Methods			Unit	TSHB		
Thickness, ± 5%		BIAXPLEN			mkm	23	25	
Density *					g/cm <sup>3</sup>		0,91	
Weight, ± 5%					g/m <sup>2</sup>		20,93	22,75
Yield, ± 5%					m <sup>2</sup> /kg		47,78	43,96
Tensile strength, not less	MD	GOST 14236	ISO 527	ASTM D882	N/mm <sup>2</sup> , MPa	140		
	TD					260		
Elongation at break, not more	MD				%		170	
	TD				%		70	
Flexural modulus *	MD				N/mm <sup>2</sup> , MPa		2700	
	TD				N/mm <sup>2</sup> , MPa		4500	
Kinetic coefficient of friction	IN / IN	GOST 27492	ISO 8295	ASTM D 1894	---	0,25	± 0,05	
	OUT / OUT					0,20		
Thermal shrinkage at 130°C, 15min *	MD	GOST 18616	ISO 11501	ASTM D1204	%	11	± 1,5	
	TD					11		
Heat Seal strength at 1bar, 1sec, 130°C, not less	IN / OUT	GOST 27319	ISO 527	ASTM D 882, ASTM F 88	N/15mm	2,5		
Haze, no more		GOST 15875	ISO 14782	ASTM D 1003	%	2,8		
Gloss at 45°, not less	OUT	BIAXPLEN	ISO 2813	ASTM D 2457	%	85		
Heat sealing range at 1bar, 1sec.*	OUT / OUT	BIAXPLEN			°C	105 - 140		
Water vapour transmission rate at 38°C, 90% rel. humidity, 24h, not more.		БИАКСПЛЕН	---	ASTM F 1249	g/m <sup>2</sup> /24h	4,4	4,2	

MD - Machine, longitudinal direction of the film;  
TD - Transverse direction of the film.;

IN - internal film side of the reel;  
OUT- external film side of the reel;

\* Typical value;  
GOST - Russian Federation standards.

**MAIN PROPERTIES:**

- Increased barrier properties;
- scratch and abrasion resistant;
- contains antistatic and slip-antilock additives;
- non symmetric coefficient of friction of the film for packs tight overwrapping;
- stable low coefficient of friction, including the heated surfaces;
- medium shrinkage film;
- excellent optical properties;
- good physical and mechanical properties and high stiffness;
- intended for contact with food;
- without coating.

**APPLICATION:**

- For carton cigarette packs overwrapping, including on ultra high speed machines with speed up to 1000p/min;
- overwrapping of the "rigid" cardboard packs on the horizontal high speed machines;
- for tight carton packs overwrapping due to shrinkability of the film;
- mainly for machines with heat tunnel;
- also for machines without a heat tunnel in which the shrinkage of the film occurs due to heating of the weld.
- for tight overwrapping of small and medium-sized carton packs;

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