

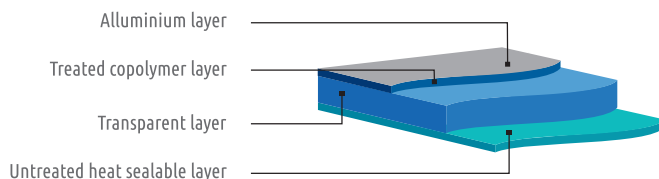


BOPP FILMS

TECHNICAL DATA SHEETS

Description

BOPP film metallized on a transparent base, heat sealable with an average sealing threshold, with one-sided activation, long-term activation, for printing, lamination and packaging



Properties	Unit	Limit	Method	Value							
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	15	18	20	25	30	35	40	42
Density	g/cm ³	±10%	WATERFALL PRO	0,91							
Weight m ² *	g/m ²	±5%	GOST 13199	13,65	16,38	18,20	22,75	27,30	31,85	36,40	38,22
Tensile strength*	MD	N/mm ² (Мпа)	not less	ASTM D882 ISO 527 GOST 14236	130						
	TD				230						
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220						
	TD				80						
Kinetic coefficient of friction**	UT / UT	-	±0,10	ASTM D1894 GOST 27492	0,3						
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	5			4			
	TD				3			2			
Heat sealing strength at 115°C, 1 bar, 1 sec.*	UT / UT	N/15 mm	not less	ASTM F88/F88M, D882 ISO 527	2,0						
Minimal heat sealing temperature not less than 1H/15mm at 1 bar, sec.*	UT / UT	°C	-	WATERFALL PRO	105						
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36						
Optical density	-	OD	not less	WATERFALL PRO	1,8						
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h	g/m ² /24 h	not more	ASTM F1249	1,0							
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h	cm ³ /m ² /24 h	not more	ASTM D3985	100							
MD – machine direction TD – transverse direction		T – treated side UT – untreated side		* indicators are measured on BOPP film – base for metallization ** these are typical values, guaranteed for the untreated side only. When processing on both sides, this value is not regulated							

Main characteristics

- long-term activation
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- stable regular coefficient of friction

Application

- for improvement of barrier properties of package
- for wrap-around label for bottles
- For packing
 - on the high-speed HFFS and VFFS packaging machines
 - with hot (heat sealing) and cold (using cold glue) seal formation
 - Flow-Pack
- For lamination
 - with other films and materials in duplex, triplex
 - using solvent and nonsolvent (extrusive) lamination
- For printing
 - high-quality rotogravure and flexographic print
 - using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

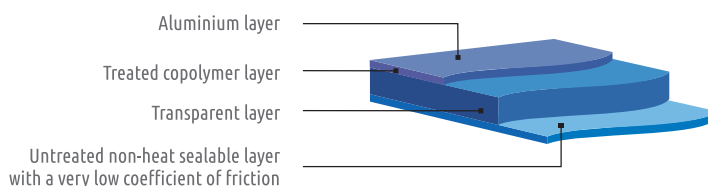
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Description

BOPP film metallized on a transparent base, heat sealable with an average seal threshold with, a low coefficient of friction with activation on one side, with a long activation retention period, for printing, lamination and packaging, in cases requiring an increase in the packaging speed



Properties		Unit	Limit	Method	Value					
Thickness*		µm	±5%	ISO 4591, 4593 GOST 17035	15	20	25	30	35	40
Density		g/cm ³	±10%	WATERFALL PRO	0,91					
Weight m ² *		g/m ²	±5%	GOST 13199	13,65	18,20	22,75	27,30	31,85	36,40
Tensile strength*	MD	N/mm ² (Мпа)	not less	ASTM D882 ISO 527 GOST 14236	130					
	TD				230					
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220					
	TD				80					
Kinetic coefficient of friction		UT / UT	-	ASTM D1894 GOST 27492	0,2					
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	5	4				
	TD				3	2				
Heat sealing strength at 115°C, 1 bar, 1 sec.*		UT / UT	N/15 mm	-	ASTM F88/F88M, D882 ISO 527		2,0			
Minimal heat sealing temperature not less than 1H/15mm at 1 bar, sec.*		UT / UT	°C	-	WATERFALL PRO		105			
Surface tension		T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296		36			
Optical density		-	OD	not less	WATERFALL PRO		1,8			
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h		g/m ² /24 h		not more	ASTM F1249		1,0			
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h		cm ³ /m ² /24 h		not more	ASTM D3985		100			
MD – machine direction TD – transverse direction		T – treated side UT – untreated side		* indicators are measured on BOPP film – base for metallization						

Main characteristics

- long-term activation
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- stable regular coefficient of friction

Application

- for improvement of barrier properties of package
- for wrap-around label for bottles
- For packing
 - on the high-speed HFFS and VFFS packaging machines
 - with hot (heat sealing) and cold (using cold glue) seal formation
 - Flow-Pack
- For lamination
 - with other films and materials in duplex, triplex
 - with method of the solvent or nonsolvent (extrusion) lamination
- For printing
 - high-quality rotogravure and flexographic print
 - using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

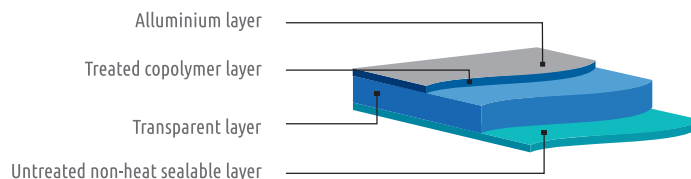
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Description

**BOPP film metallized on a transparent base,
non-heat sealable,
with activation on one side,
with a long shelf life of activation,
for printing, lamination and
decorative packaging**



Properties	Unit	Limit	Method	Value					
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	15	20	25	30	35	40
Density	g/cm ³	±10%	WATERFALL PRO	0,91					
Weight m ² *	g/m ²	±5%	GOST 13199	13,65	18,20	22,75	27,30	31,85	36,40
Tensile strength*	MD	N/mm ² (МПа)	not less	ASTM D882 ISO 527 GOST 14236	140				
	TD				250				
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	200				
	TD				70				
Kinetic coefficient of friction	UT / UT	-	±0,10	ASTM D1894 GOST 27492	0,35				
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	4				
	TD				2				
Heat sealing strength	-	N/15 mm	-	ASTM F88/F88M, D882 ISO 527	non-heat sealable				
Minimal heat sealing temperature	-	°C	-	WATERFALL PRO	non-heat sealable				
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36				
Optical density	-	OD	not less	WATERFALL PRO	1,8				
MD – machine direction TD – transverse direction		T – treated side UT – untreated side		* indicators are measured on BOPP film – base for metallization					

Main characteristics

- long-term activation
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- high coefficient of friction

Application

- for decorative packaging/wrapping
 - for packet machines
 - for packaging tape production
 - for wrap-around label for bottles
- For packing**
- in cases, when heat sealing is not required
 - with hot (heat sealing) and cold (using cold glue) seal formation
 - manual application in decorative packaging

For lamination

- with other films and materials
- using solvent and nonsolvent (extrusive) lamination

For printing

- high-quality rotogravure and flexographic print
- using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

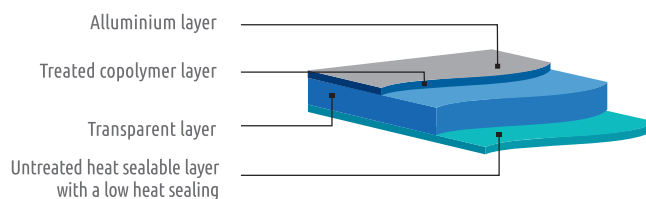
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Description

BOPP film metallized on a transparent base, heat sealable with a low sealing threshold, with activation on one side, with a long activation retention period, for printing, lamination and packaging, in cases requiring lower heat sealing temperatures



Properties	Unit	Limit	Method	Value					
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	15	20	25	30	35	40
Density	g/cm ³	±10%	WATERFALL PRO	0,91					
Weight m ² *	g/m ²	±5%	GOST 13199	13,65	18,20	22,75	27,30	31,85	36,40
Tensile strength*	MD	N/mm ² (Мпа)	not less	ASTM D882 ISO 527 GOST 14236	130				
	TD				230				
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220				
	TD				80				
Kinetic coefficient of friction	UT / UT	-	±0,10	0,3					
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	5	4			
	TD				3	2			
Heat sealing strength at 95°C, 1 бар, 1 sec.*	UT / UT	N/15 mm	not less	ASTM F88/F88M, D882 ISO 527	2,2				
Minimal heat sealing temperature not less than 1H/15mm at 1 бар, sec.*	UT / UT	°C	-	WATERFALL PRO	80				
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36				
Optical density	-	OD	not less	WATERFALL PRO	1,8				
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h	g/m ² /24 h	not more	ASTM F1249	1,0					
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h	cm ³ /m ² /24 h	not more	ASTM D3985	100					
MD – machine direction TD – transverse direction		T – treated side UT – untreated side		* indicators are measured on BOPP film – base for metallization					

Main characteristics

- long-term activation
- low heat sealing temperature
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- stable regular coefficient of friction

Application

- for improvement of package's barrier properties
- for decreasing temperature of heat sealing
- for increasing speed of heat sealing
- [For packing](#)
- on the high-speed HFFS and VFFS packaging machines
- with hot (heat sealing) seal formed at lower heat sealing temperatures (from 80°C)
- Flow-Pack
- [For lamination](#)
- with other films and materials in duplex, triplex
- with method of the solvent or nonsolvent (extrusion) lamination
- [For printing](#)
- high-quality rotogravure and flexographic print
- using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

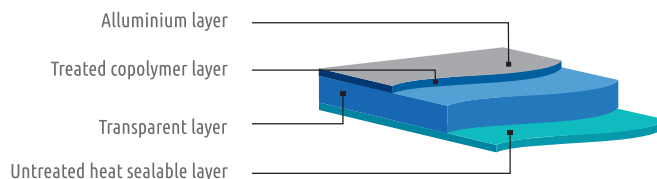
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Description

Metallized BOPP film with high barrier properties, on a transparent base, heat sealable with an average sealing threshold, with activation on one side, with a long activation retention period, for printing, lamination and packaging, in cases requiring high barrier properties



Properties	Unit	Limit	Method	Value					
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	18	20	25	30	35	40
Density	g/cm ³	±10%	WATERFALL PRO	0,91					
Weight m ² *	g/m ²	±5%	GOST 13199	16,38	18,20	22,75	27,30	31,85	36,40
Tensile strength*	MD	N/mm ² (МПа)	not less	ASTM D882 ISO 527 GOST 14236	130				
	TD				230				
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220				
	TD				80				
Kinetic coefficient of friction**	UT / UT	-	±0,10	ASTM D1894 GOST 27492	0,3				
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	5	4			
	TD				3	2			
Heat sealing strength at 120°C, 1 bar, 1 sec.*	UT / UT	N/15 mm	not less	ASTM F88/F88M, D882 ISO 527	2,0				
Minimal heat sealing temperature not less than 1H/15mm at 1 bar, sec.*	UT / UT	°C	-	WATERFALL PRO	105				
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36				
Optical density	-	OD	not less	WATERFALL PRO	2,5				
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h	g/m ² /24 h	not more	ASTM F1249	1,0					
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h	cm ³ /m ² /24 h	not more	ASTM D3985	50					

MD – machine direction
TD – transverse direction

T – treated side
UT – untreated side

* indicators are measured on BOPP film – base for metallization
** these are typical values, guaranteed for the untreated side only. When processing on both sides, this value is not regulated

Main characteristics

- excellent barrier properties
- long-term activation
- excellent adhesion of aluminium cover
- excellent optical properties
- stable regular coefficient of friction

Application

- for packaging of products which require high barrier properties: biscuits, chips, waffles and etc.
- for extension of products storage period

For packing

- on the high-speed HFFS and VFFS packaging machines
- with hot (heat sealing) and cold (using cold glue) seal formation
- Flow-Pack

For lamination

- with other films and materials
- with method of the solvent or nonsolvent (extrusion) lamination

For printing

- high-quality rotogravure and flexographic print
- using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

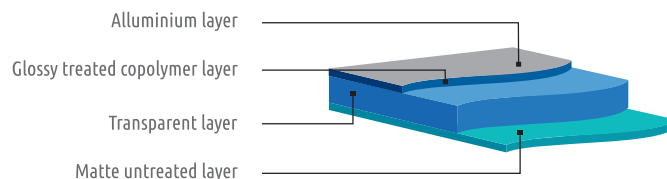
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Description

BOPP film metallized on a matte base on one side and a glossy base on the other (metallized on the glossy side), non-heat sealable, with surface activation on one (glossy) side, with a long activation retention period, for lamination and decorative packaging



Properties	Unit	Limit	Method	Value		
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	15	20	35
Density	g/cm ³	±10%	WATERFALL PRO	0,85		
Weight m ² *	g/m ²	±5%	GOST 13199	12,75	17,00	29,75
Tensile strength*	MD	N/mm ² (МПа)	not less	ASTM D882 ISO 527 GOST 14236	125	
	TD				240	
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220	
	TD				80	
Kinetic coefficient of friction**	UT / UT	-	±0,15	ASTM D1894 GOST 27492		0,3
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	4	
	TD				2	
Heat sealing strength	-	N/15 mm	-	ASTM F88/F88M, D882 ISO 527	non-heat sealable	
Minimal heat sealing temperature	-	°C	-	WATERFALL PRO	non-heat sealable	
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36	
Optical density	-	OD	not less	WATERFALL PRO	1,8	

MD – machine direction
TD – transverse direction

T – treated side
UT – untreated side

* indicators are measured on BOPP film – base for metallization
** these are typical values, guaranteed for the untreated side only. When processing on both sides, this value is not regulated

Main characteristics

- long-term activation
- excellent adhesion of aluminium cover
- excellent optical properties
- stable regular coefficient of friction

Application

For lamination

- with other films and materials in duplex, triplex
- using solvent and nonsolvent (extrusive) lamination

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

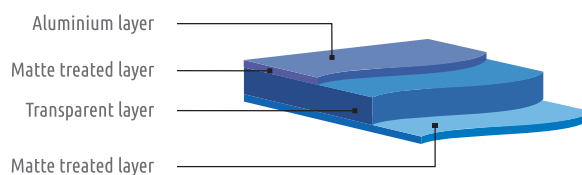
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Description

BOPP film metallized on a matte base on both sides (on one of the matte sides), non-heat sealable, with double-sided surface activation, with a long activation retention period, for decorative packaging



Properties	Unit	Limit	Method	Value	
Thickness*	µm	±5%	ISO 4591, 4593 GOST 17035	35	40
Density	g/cm ³	±10%	WATERFALL PRO	0,85	
Weight m ² *	g/m ²	±5%	GOST 13199	29,75	34,00
Tensile strength*	MD	N/mm ² (Мпа)	not less	ASTM D882 ISO 527 GOST 14236	120
	TD				240
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	220
	TD				80
Kinetic coefficient of friction	T/T	-	±0,15	0,35	
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	4
	TD				2
Heat sealing strength	-	N/15 mm	-	ASTM F88/F88M, D882 ISO 527	non-heat sealable
Minimal heat sealing temperature		°C	-	WATERFALL PRO	non-heat sealable
Surface tension	T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36

MD – machine direction
TD – transverse direction

T – treated side

* indicators are measured on BOPP film – a base for metallization

Main characteristics

- matte appearance on both sides of graphite color
- excellent adhesion of aluminium cover
- does not contain antistatic additives

Application

- to give the package a matte “silk” or “paper” look with the color graphite
 - for decorative packaging / wrappers
 - heat sealing by string is possible
- [For packing](#)
- for manual and machine wrapping of products (flowers, gifts, stationery, textile products, etc.)

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- in the process of printing and lamination it is recommended to perform corona treatment

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

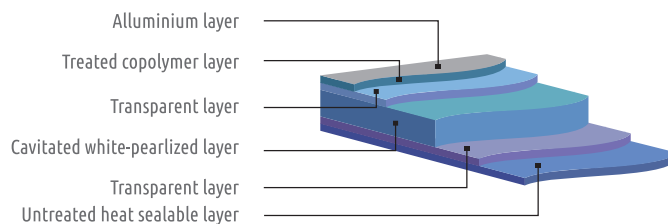
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Description

BOPP film metallized white-pearlescent filled base, heat sealable with a medium seal threshold, with activation on one side, with a long activation retention period, for printing, lamination and packaging



Properties		Unit	Limit	Method	Value		
Thickness*		µm	±5%	ISO 4591, 4593 GOST 17035	30	35	40
Density		g/cm ³	±10%	WATERFALL PRO	0,70		
Weight m ² *		g/m ²	±5%	GOST 13199	21,00	24,50	28,00
Tensile strength*	MD	N/mm ² (Mpa)	not less	ASTM D882 ISO 527 GOST 14236	70		
	TD				140		
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	200		
	TD				60		
Kinetic coefficient of friction**		UT / UT	-	ASTM D1894 GOST 27492	0,3		
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	4		
	TD				2		
Heat sealing strength at 115°C, 1 bar, 1 sec.*		UT / UT	N/15 mm	ASTM F88/F88M, D882 ISO 527	2,5		
Minimal heat sealing temperature not less than 1H/15mm at 1 bar, sec.*		UT / UT	°C	WATERFALL PRO	105		
Surface tension		T	mN/m (dyn/cm)	ASTM D2578 ISO 8296	36		
Optical density		-	OD	WATERFALL PRO	1,8		
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h		g/m ² /24 h		ASTM F1249	1,5		
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h		cm ³ /m ² /24 h		ASTM D3985	150		

MD – machine direction
TD – transverse direction

T – treated side
UT – untreated side

* indicators are measured on BOPP film – base for metallization
** these are typical values, guaranteed for the untreated side only. When processing on both sides, this value is not regulated

Main characteristics

- long-term activation
- activation on both sides on demand
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- high coefficient of friction
- lowered density and high yield

Application

- for packaging of products which require high barrier properties and protection from UV-light: ice-cream, chocolate and etc.
- for extension of products storage period

For packing

- on the high-speed HFFS and VFFS packaging machines
- with hot (heat sealing) and cold (using cold glue) seal formation
- Flow-Pack

For lamination

- with other films and materials in duplex, triplex
- with method of the solvent or nonsolvent (extrusion) lamination

For printing

- high-quality rotogravure and flexographic print
- using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

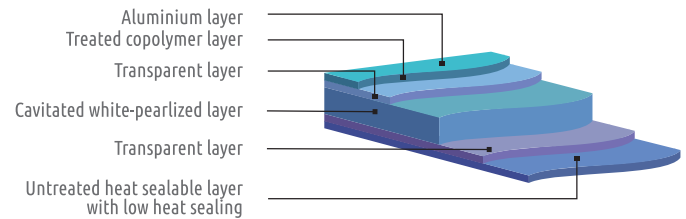
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Description

BOPP film metallized on a white-pearlescent filled base, heat sealable with a low sealing threshold, with activation on one side, with a long activation retention period, for printing, lamination and packaging, in cases requiring lower heat sealing temperatures



Properties		Unit	Limit	Method	Value		
Thickness*		µm	±5%	ISO 4591, 4593 GOST 17035	30	35	40
Density*		g/cm ³	±10%	WATERFALL PRO	0,70		
Weight m ² *		g/m ²	±5%	GOST 13199	21,00	24,50	28,00
Tensile strength*	MD	N/mm ² (МПа)	not less	ASTM D882 ISO 527 GOST 14236	70		
	TD				140		
Elongation at break*	MD	%	not more	ASTM D1894 GOST 27492	200		
	TD				60		
Kinetic coefficient of friction		UT / UT	-	ASTM D1894 GOST 27492	0,3		
Shrinkage at 120°C, 5 мин*	MD	%	not more	ASTM D1204	4		
	TD				2		
Heat sealing strength at 95°C, 1 bar, 1 sec.*		UT / UT	N/15 mm	not less	ASTM F88/F88M, D882 ISO 527	2,2	
Minimal heat sealing temperature not less than 1H/15mm at 1 bar, sec.*		UT / UT	°C	-	WATERFALL PRO	80	
Surface tension		T	mN/m (dyn/cm)	not less	ASTM D2578 ISO 8296	36	
Optical density		-	OD	not less	WATERFALL PRO	1,8	
WVTR-water vapour transmission rate at 38°C, 90% rel. humidity, 24 h		g/m ² /24 h	not more	ASTM F1249	1,5		
OTR-oxygen transmission rate at 23°C, 0% rel. humidity, 24 h		cm ³ /m ² /24 h	not more	ASTM D3985	150		
MD – machine direction TD – transverse direction		T – treated side UT – untreated side	* indicators are measured on BOPP film – a base for metallization				

Main characteristics

- low heat sealing temperature
- long-term activation
- activation on both sides on demand
- excellent adhesion of aluminium cover
- excellent optical properties
- excellent barrier properties
- high coefficient of friction
- lowered density and high yield

Application

- for packaging of products which require high barrier properties and protection from UV-light: ice-cream, chocolate and etc.

- for extension of products storage period

For packing

- on the high-speed HFFS and VFFS packaging machines
- with hot (heat sealing) seal formation at lower temperatures (from 85°C) and cold (using cold glue)
- Flow-Pack

For lamination

- with other films and materials in duplex, triplex
- using solvent and nonsolvent (extrusive) lamination

For printing

- high-quality rotogravure and flexographic print
- using solvent paint

Storage

- films should be stored on the pallets in a closed dry place and should not be exposed to direct sunlight, at a safe distance of not less than 1 m from heating devices or anything that can cause damage the package
- the film should be kept in workplace not less than 48 hours before being used
- guaranteed storage period – 6 months from production date

Treatment

- the guaranteed period for maintaining the minimum permissible level of surface tension on the activated film surface from the date of manufacture, subject to proper storage conditions, is 3 months
- in the interests of minimizing the deterioration of surface dressing level, it is recommended to store the film at a temperature of no higher than 30°C and use it in a short time

Recycling

- it's recommended to use primer when printing on metallized surface

Reeling

- maximum roll diameter 800 mm
- film width in a roll from 290 to 2000 mm
- diameter of paper cores (inside) 76, 152 mm

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