

### BOPP PLAIN PRINTING & LAMINATION

Is widely used in printing and laminating for packaging application. TFI film offers exceptional clarity. Good dimensional stability, flatness and strength.

PRODUCT CODE  
NO. OP - 110 R1

#### TECHNICAL DATA

TYPICAL PROPERTIES	UNIT	TEST METHODS	TYPICAL VALUE						
			15	18	19	20	25	28	
THICKNESS	micron	Micrometer	15	18	19	20	25	28	
YIELD	m <sup>2</sup> /kg (min.)	-	74.07	61.73	58.48	55.56	44.44	39.68	
DENSITY	g/cm <sup>3</sup>	ASTM D-1505	0.90	0.90	0.90	0.90	0.90	0.90	
AVERAGE THICKNESS VARIATION	% (max.)	ASTM E-252	± 3	± 3	± 3	± 3	± 3	± 3	
TENSILE STRENGTH	kg/mm <sup>2</sup> (min.)	MD	ASTM	13	13	13	13	13	13
		TD	D-882	24	24	24	24	24	24
ELONGATION AT BREAK	% (max.)	MD	ASTM	200	170	170	170	170	170
		TD	D-882	70	70	70	70	70	70
THERMAL SHRINKAGE (120°c 15min.)	% (max.)	MD	ASTM	4.0	4.0	4.0	4.0	4.0	4.0
		TD	D-1204	2.0	2.0	2.0	2.0	2.0	2.0
STATIC C.O.F.	film/film	ASTM D-1894	0.35-0.50	0.35-0.50	0.35-0.50	0.35-0.50	0.35-0.50	0.35-0.50	
HALF DECAY TIME	seconds (max.)	STATIC HONEST METER	600	600	600	600	600	600	
HAZE	% (max.)	ASTM D-1003	1.5	1.5	1.5	1.5	1.8	2.0	
GLOSS (Angle 45°)	% (min.)	ASTM D-2457	85	85	85	85	85	85	
WVTR	g/m <sup>2</sup> /24hr (max.)	ASTM F-1249	10	9	9	8	6	5	
O <sub>2</sub> TR	cc/m <sup>2</sup> /24hr (max.)	ASTM D-3985	2,200	2,100	2,000	2,000	1,800	1,700	
WETTING TENSION	Dyne/cm (min.)	ASTM D-2578	38	38	38	38	38	38	

#### DESCRIPTION OF SUPPLY

PAPER CORE I.D.	77 mm (3 in.) 153 mm (6 in.)
ROLL O.D.	max. 800 mm
WIDTH RANGE	100 mm - 1,500 mm. (other width on request)
LENGTH RANGE	STANDARD 4,000 m., 6,000 m., 8,000 m. (other length on request)
JOINT	maximum 10% per order

**Food approval : complied with FDA & EU regulations (on request)**

**Storage condition: should be keep at ambient temperature ~ 30°C and not over 40°C and keep in dry storage.**

#### FURTHER TECHNICAL INFORMATION ON REQUEST

**The above standard film properties are subjected to change and periodical modification without prior notice, please re-check for the most update version with our Sales & Marketing Department.**

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TYPICAL PROPERTIES	UNIT		TEST METHODS	TYPICAL VALUE				
THICKNESS	micron		Micrometer	30	35	40	50	60
YIELD	m <sup>2</sup> /kg (min.)		-	37.07	32.75	27.78	22.22	18.52
DENSITY	g/cm <sup>3</sup>		ASTM D-1505	0.90	0.90	0.90	0.90	0.90
AVERAGE THICKNESS VARIATION	% (max.)		ASTM E-252	± 3	± 3	± 3	± 3	± 3
TENSILE STRENGTH	kg/mm <sup>2</sup> (min.)	MD	ASTM	13	13	13	13	13
		TD	D-882	24	24	24	24	24
ELONGATION AT REAK	% (max.)	MD	ASTM	170	170	170	170	170
		TD	D-882	70	70	70	70	70
THERMAL SHRINKAGE (120°c 15 minutes)	% (max.)	MD	ASTM	170	170	4.0	4.0	4.0
		TD	D-1204	70	70	2.0	2.0	2.0
STATIC C.O.F.	film/film		ASTM D-1894	0.35 - 0.50	0.35 - 0.50	0.35 - 0.50	0.35 - 0.50	0.35 - 0.50
HALF DECAY TIME	seconds(max.)		STATIC HONEST METER	600	600	600	600	600
HAZE	% (max.)		ASTM D-1003	2.0	2.2	2.2	2.5	2.5
GLOSS (angle 45°)	% (min.)		ASTM D-2457	85	85	85	85	85
WVTR	g/m <sup>2</sup> /24hr (max.)		ASTM F-1249	4	4	3	3	2
O <sub>2</sub> TR	cc/m <sup>2</sup> /24hr (max.)		ASTM D-3985	1,600	1,400	1,200	900	800
WETTING TENSION	Dyne/cm (min.)		ASTM D-2578	38	38	38	38	38

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## PROVISIONAL TECHNICAL DATA SHEET

### B - 01

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THICKNESS	micron		Micrometer	41
YIELD	m <sup>2</sup> /kg (min.)		-	27.10
DENSITY	g/cm <sup>3</sup>		ASTM D-1505	0.90
AVERAGE THICKNESS VARIATION	% (max.)		ASTM E-252	± 3
TENSILE STRENGTH	kg/mm <sup>2</sup> (min.)	MD	ASTM	13
		TD	D-882	24
ELONGATION AT REAK	% (max.)	MD	ASTM	170
		TD	D-882	70
THERMAL SHRINKAGE (120°C 15 minutes)	% (max.)	MD	ASTM	4.0
		TD	D-1204	2.0
STATIC C.O.F.	film/film		ASTM D-1894	0.35 - 0.50
HALF DECAY TIME	seconds(max.)		STATIC HONEST METER	600
HAZE	% (max.)		ASTM D-1003	2.2
GLOSS (angle 45°)	% (min.)		ASTM D-2457	85
WVTR	g/m <sup>2</sup> /24hr (max.)		ASTM F-1249	3
O <sub>2</sub> TR	cc/m <sup>2</sup> /24hr (max.)		ASTM D-3985	1,200
WETTING TENSION	Dyne/cm (min.)		ASTM D-2578	38

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