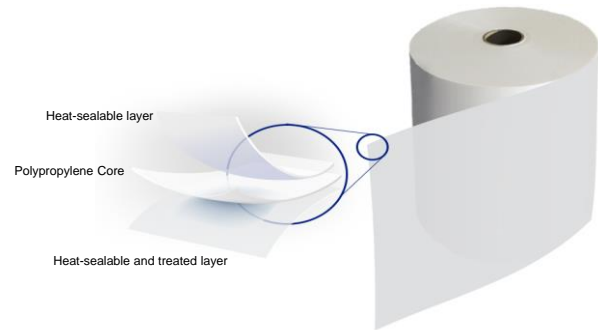


Main Characteristics

- Heat sealable on both sides, the untreated side being the from 105°C;
- Internal or external surface treatment;
- Non-cavitated film providing better productive performance;
- Excellent gloss on both sides;
- Great performance in horizontal and vertical filling machines.



Typical Applications

- Flexible food packaging: biscuits, snacks, ice cream, chocolates, cereal bars and alfajores;
- Flexible non-food packaging: monolayer or laminated;
- Developed for HFFS filling processes - Horizontal Form Fill Seal and VFFS - Vertical Form Fill Seal.

Properties	Methodology	Unit	Range	19TBS	
Physical Properties					
Nominal Thickness <i>Orientation</i>	DIN 53370	µm	Target	20.2	
		Gauge	Target	80.9	
Unit Weight	ASTM D 4321	g/m ²	Target	19.0	
			Min.	18.1	
			Max.	20.0	
		lb/ream	Target	11.7	
Min.	11.1				
Yield	ASTM D 4321	m ² /kg	Target	52.6	
			Min.	50.1	
			Max.	55.4	
		in ² /lb	Target	36842	
			Min.	35088	
			Max.	38781	
Surface Treatment	T	ASTM D 2578	dinas/cm	Target	≥ 38
Coefficient of Friction	MAT	ASTM D 1894	-	Target	0.25
				Min.	0.20
				Max.	0.30
Optical Properties					
Transmittance	ASTM D 1003	%	Target	≤ 60	
Gloss (45°)	ASTM D 2457	u.b.	Target	50	
Mechanical Properties					
Tensile Strenght	MD	ASTM D 882	N/mm ²	Target	115
				Target	230
			lbf/in ²	Target	16675
				Target	33350
Elongation at Break	MD	ASTM D 882	%	Target	180
				Target	50
Shrinkage	MD	ASTM D 1204	%	Target	4
				Target	2
Sealing Range	NT	ASTM F 88	°C	Target	105 - 130
			°F	Target	121 - 266
Sealing Strenght	NT	ASTM F 88	g/25mm or gf/in	Target	450
				Min.	300
Barrier Properties					
TPVA 38°C / 90%UR	ASTM F 1249	g H ₂ O / (m ² .dia)	Target	≤ 6.0	
WVTR 100°F / 90%RH	ASTM F 1249	g H ₂ O / (100in ² .day)	Target	≤ 0.39	
TPO ₂ 23°C / 0%UR	ASTM D 3985	cm ³ O ₂ / (m ² .dia)	Target	NA	
OTR 73°F / 0%RH	ASTM D 3985	cm ³ O ₂ / (100in ² .day)	Target	NA	

1. Acronyms:

MD: Machine Direction | TD: Transverse Direction;
NT: Non Treated Layer | T: Treated Layer;
NA: Not Applicable.

2. Additional:

The restrained information in this datasheet represent typical data, and does not constitute genuine warranty liability as far as the product process and or application. In case of doubts or development of other thicknesses or applications, consult your dealer or send e-mail to: contato@polofilms.com.br.



Food Contact Regulations

OPAQUE Family films comply with Mercosul, ANVISA, FDA (Food and Drug Administration) and the European Community legislations for applications involving direct contact with food. Full details are provided in the Declaration of Conformity. Customers intending to use OPAQUE Family films for applications intended to come into contact with food should request a copy of that document from POLO FILMS.

The MSDS (Material Safety Data Sheet), as well as the evaluation of conformity for contact with food from other legislations are also available upon request. Contact your dealer for any questions.

Storage and Transportation Terms & Conditions

All products are stored and transported in dry, covered and clean environments.
It is recommended that storage and transportation take place at temperature around 30°C and 60% relative humidity.

If the temperature and humidity are not as recommended, the following issues may occur:

- Decreased level of surface treatment, leading to printing and/or lamination difficulties;
- Decreased film transparency;
- Too low CoF, making processing and machinability difficult.

BOPP films are recommended to be kept at operating room temperature for 24 hours before use.

Dimensional Specifications / Product Validity

Width	Minimum: 0 mm Maximum: 2 mm (from standard width)
Outer Diameter*	Minimum: 30 mm Maximum: 20 mm (from standard diameter)
Core	Minimum: 1 mm Maximum: 1 mm (from standard diameter)
Splices per roll	Maximum: 2
% of Splices per order	Maximum: 30%
Shelf Life (after production)	6 months

* For other dimensional information, consult your dealer.

Polo Films Nomenclature

Unit Weight or Thickness | Technology | Main Feature | Sealing | Treatment
19TBS32

Unit Weight / Thickness

Expressed in g/m². Used for white/opaque films;
Expressed in µm. Used for transparent, matte and metallized films.

Technology

T - Tenter | C - Cast | P - BOPET.

Main Feature

BS - Heat-sealable solid white for printing and/or lamination.

Specialty

Not applicable.

Sealing

- 0 - Not Sealable;
- 1 - Sealing on the Inner Face;
- 2 - Sealing on the Outer Face;
- 3 - Sealing on both Sides.

Treatment

- 0 - No Treatment;
- 1 - Treatment on Inner Face;
- 2 - Treatment on Outer Face;
- 3 - Treatment on both Sides.