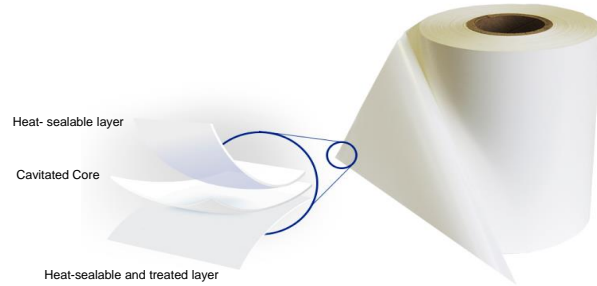


Main Characteristics

- Both sides heat-sealable, non-treated side from 105°C;
- Surface treatment on inner or outer layer;
- High gloss on both sides;
- High-opacity cavitated film;
- Optimum performance in horizontal and vertical form-fill-seal packing machines.



Typical Applications

- Flexible packaging for food: candies, chocolate bars, ice cream;
- Non-food flexible packaging: packaging for gifts and decorative applications in general;
- Developed for HFFS - Horizontal Form Fill Seal and VFFS - Vertical Form Fill Seal filling processes.

Properties	Methodology	Unit	Range	20TBP HGS	22TBP HGS	26TBP HGS
Physical Properties						
Nominal Thickness	DIN 53370	µm	Target	29.2	31.3	35.6
			Min.	27.7	29.7	33.8
			Max.	30.7	32.8	37.4
		Gauge	Target	116.8	125.0	142.5
			Min.	110.9	118.8	135.3
			Max.	84.0	131.3	149.6
Unit Weight	ASTM D 4321	g/m ²	Target	20.0	22.0	26.0
			Min.	19.0	20.9	24.7
			Max.	21.0	23.1	27.3
		lb/ream	Target	12.3	13.5	15.9
			Min.	11.7	12.8	15.2
			Max.	12.9	14.2	16.7
Yield	ASTM D 4321	m ² /kg	Target	50.0	45.5	38.5
			Min.	47.6	43.3	36.6
			Max.	52.6	47.8	40.5
		in ² /lb	Target	35000	31818	26923
			Min.	33333	30303	25641
			Max.	36842	33493	28340
Surface Treatment	T	ASTM D 2578	dinas/cm	Target	40	
				Min.	38	
Coefficient of Friction	NT	ASTM D 1894	-	Target	0.18	
				Min.	0.13	
				Max.	0.23	
Optical Properties						
Transmittance	ASTM D 1003	%	Target	29		
			Max.	34		
Gloss (45°)	ASTM D 2457	u.b.	Target	85		
			Min.	77		
Mechanical Properties						
Tensile Strength	MD	ASTM D 882	N/mm ²	Target	80	
	TD			140		
	MD		lbf/in ²	Target	11600	
	TD			20300		
Elongation at Break	MD	ASTM D 882	%	Target	120	
	TD			40		
Shrinkage	MD	ASTM D 1204	%	Target	3	
	TD			1		
Sealing Range	NT	ASTM F 88	°C	Target	105 - 130	
			°F	Target	221 - 266	
Sealing Strength	NT	ASTM F 88	g/25mm or gf/in	Target	350	
				Min.	300	
Barrier Properties						
TPVA 38°C / 90%UR	ASTM F 1249	g H ₂ O / (m ² .dia)	Target	≤ 7.5	≤ 6.5	≤ 5.5
WVTR 100°F / 90%RH	ASTM F 1249	g H ₂ O / (100in ² .day)	Target	≤ 0.48	≤ 0.42	≤ 0.35
TPO ₂ 23°C / 0%UR	ASTM D 3985	cm ³ O ₂ / (m ² .dia)	Target	≤ 2500	≤ 2300	≤ 2100
OTR 73°F / 0%RH	ASTM D 3985	cm ³ O ₂ / (100in ² .day)	Target	≤ 161	≤ 148	≤ 135

1. Acronyms:

MD: Machine Direction | TD: Transverse Direction;
NT: Non Treated Layer | T: Treated Layer.

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 | Specialty | Sealing | Treatment

20TBP HGS32

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

BP - Heat-sealable opaque white for printing and/or lamination.

Specialty

HGS - High slip.

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.