VIBAC®
GROUP

BOPP FILM

DIVISION

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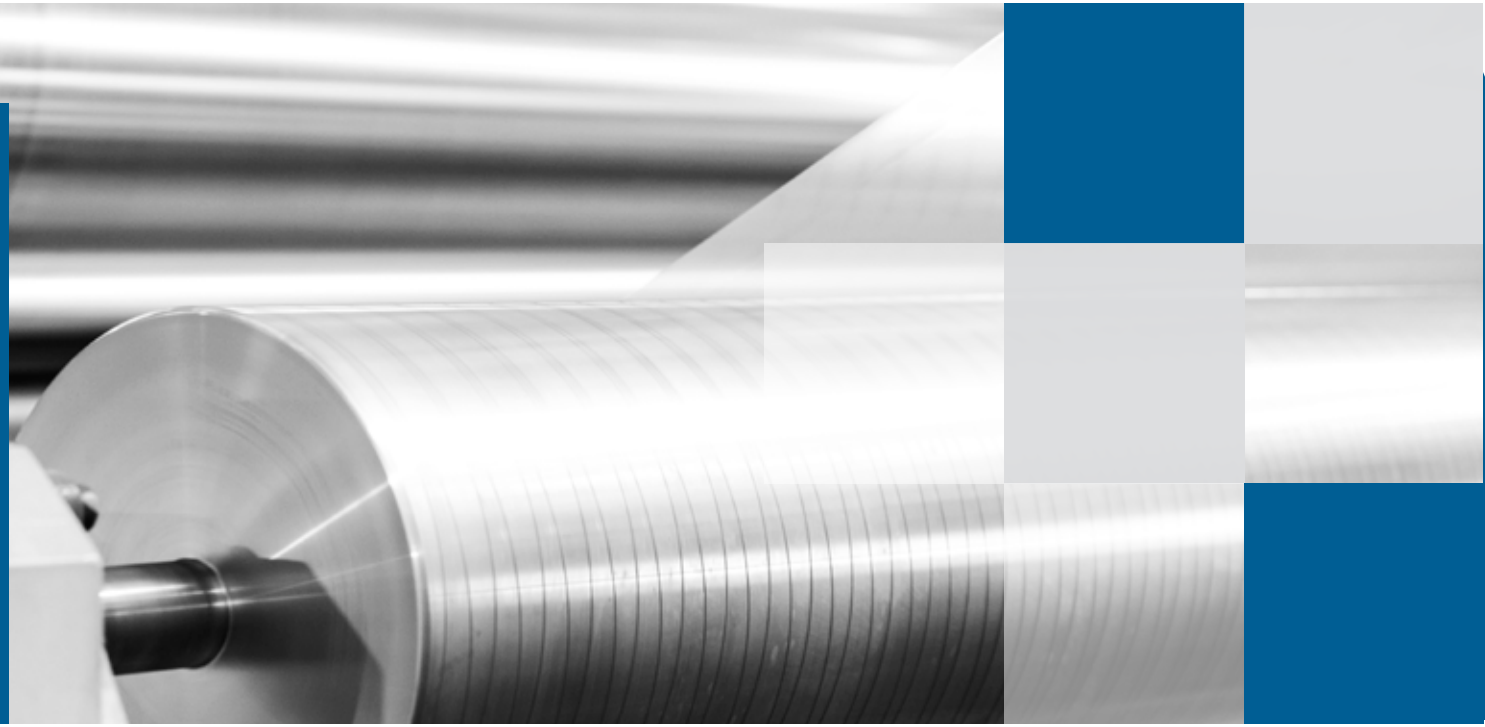
BOPP FILM DIVISION

01

COMPANY PRESENTATION

VIBAC Group is a multinational enterprise and one of the world's leading companies in the Pressure Sensitive Self Adhesive Tapes and specialty Packaging Films industry.



MARKETS

We are contributing to the growth of different industries:

- Packaging and Labelling
- Transportation and Logistics
- E-commerce and business services
- Building and Automotive
- Professional painting and DIY

We are serving different channels:

- Converters / Printers
- Wholesalers / Distributors
- Professional dealers
- Industrial enterprises
- Large-scale retail trade

MISSION

Achieving sustainable and durable growth through the application of our cutting-edge manufacturing technologies. Building a culture that gives Customer Satisfaction the highest consideration and priority.
Support a sustainable corporate growth in line with the strictest environmental regulations.

GLOBAL PRESENCE

6 operative plants in Europe and North America. Serving customers in over 130 countries.

OUTSTANDING PRODUCTION CAPABILITIES

Adhesive tapes: 3,000 million sqm
Film BOPP: 130,000 Tons

300 MILLION EUROS

revenues

900

employees

VIBAC S.p.A - Italy

1 Headquarter (Ticineto) Italy
2 Vinci Plant (Vinci) Italy
3 L'Aquila Plant (L'Aquila) Italy
4 Termoli Plant (Termoli) Italy
5 Viggiano Plant (Viggiano) Italy
6 VIBAC Balcani D.o.o. (Jagodina) Serbia
7 VIBAC TAPE Inc. (Montreal) Canada
8 New Branch (Johannesburg) South Africa

02

BUSINESS SEGMENT AND APPLICATION

BUSINNESS SEGMENT

Flexible Packaging.

APPLICATION

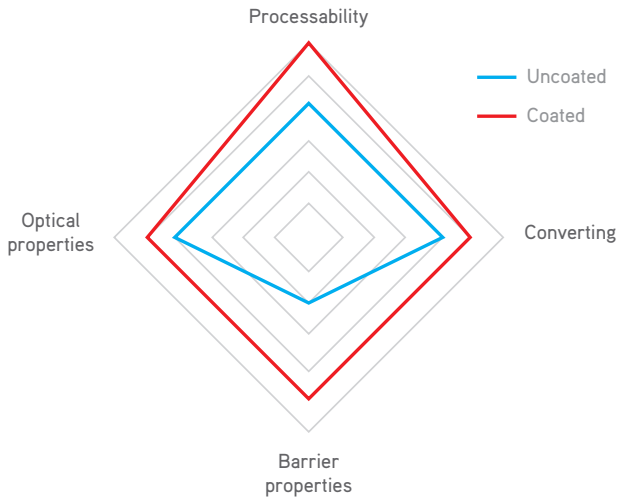
- Snacks & Crisps
- Confectionery & Chocolate
- Easter Eggs
- Bakery & Biscuits
- Ice Cream & Frozen Food
- Dried Food & Nuts
- Fresh Produce
- Box wrapping
- Flower & Gift wrap

FILM TYPE

	VIFAN UNCOATED	VCOAT® COATED
TRANSPARENT	**NOT SEALABLE:** BTN, BK, BRTN, BF	A1.CT, AA.C, AP.C, AL.C, PL.C, AH.C, PS.C, PMB
TRANSPARENT	**SEALABLE:** CT, CMC, CLSN, GE, BAV/BAC **NEW**: CC	**MINERAL OIL BARRIER:** BL.C, BL.H; BA.C, BA.H **IMPROVED BARRIER NEW:** WL.C, WP.C
VFRESH	**ANTIFOG:** CTG **BREATHABLE:** CBG **LOW SEALABLE ANTIFOG:** CTGN	
MATT	**RELEASE NOT SEALABLE:** CCS **SEALABLE:** CSK, CSKL	
SOLID & WHITE CAVITATED	DW/DWF, PNJ, PNJK, PSA, PWN	AA.H, AP.H, AL.H, PL.H
VMET METALLIZED	CZN, CZSN, CH, CHN, CHSN, GZSN, GH PZE, PHE	A1.CM

03

VCOAT® COATED FILM RANGE



KEY PROPERTIES

- Water based coating technology
- Excellent flavor and aroma barrier to preserve the product taste
- Stable and consistent coefficient of friction
- Outstanding odour barrier to prevent off odour or pack-to-pack contamination
- High moisture and oxygen barrier (AP.C/H, PL.C,WP.C & AH.C)
- Outstanding packaging performance for high and variable speed HFFS applications,(AL.C/H, PL.C/H & BL.C/H)
- Bisphenol free
- Very good mineral oil barrier for standard coated film
- Excellent mineral oil barrier for BA.C/H AND BL.C/H

NOMENCLATURE COATED FILM

COATING TYPE

- (A) ACRYLIC
- (P) PVdC
- (L) LTS
- (M) METALLIZATION
- (B) MOH COATING
- (W) IMPROVED BARRIER
- (H) PVOH

FILM TYPE

- (C) CLEAR/TRANSPARENT
- (H) WHITE CAVITATED (0,75 g/cm^3)

COLOUR

- ACRYLIC
- PVdC
- LTS
- AL
- B
- W
- H

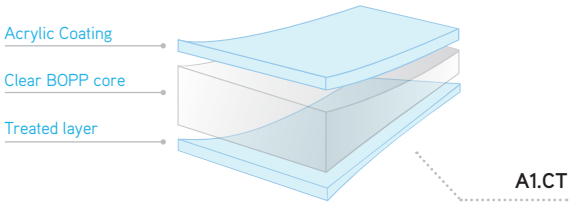
COATING TYPE & COMBINATION

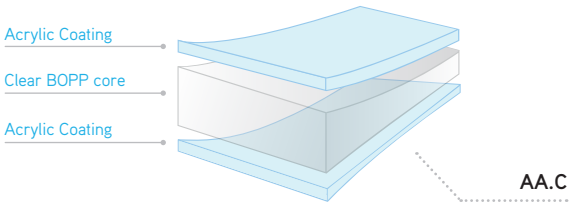
ACRYLIC Coating	**PVdC** Coating	**LTS** Low temperature sealant Coating	**PVOH** Coating	**B** (MOH barrier) Coating	**W** (Improved Barrier) Coating
• Water based coating • Excellent optical properties • Outstanding aroma & odours barrier • Broad seal range (SIT =90°C) with very good ability to seal at low pressure • Low and consistent coefficient of friction (COF) for an improved line efficiency • Excellent printability (high wettability)	• Water based coating • Excellent barrier properties (oxygen, water vapor and aroma) • Consistent CoF • Excellent optical properties. • Broad sealing range (SIT=100°C) • Seal against Acrylic	• Water based coating • Broad operating window for robust performance on variable speed HFFS packaging lines. • Its adequate slip allows to reduce and optimize both cut off and width. • Improved seal integrity • Seal only with itself	• Water based coating • The outstanding gas barrier and aroma properties of the PVOH coating provides high protection • Very good optical properties • PVOH must be protect • Specifically designed for MAP application.	• Water based coating • Superior mineral oil barrier also at very high concentration of migrant • Excellent optical properties	• Water based coating • Oustanding barrier to water vapor and oxygen vs standard Acrylic and PVdC coating • Aroma & odours barrier • Excellent optical properties
• AA.C - AA.H • AL.H - AP.C - AP.H	• AP.C – PL.C – WP.C-PS.C • AP.H – PL.H	• AL.C – PL.C – WL.C • AL.H – PL.H	• AH.C	• BA.C - BA.H - BL.C - BL.H	• WL.C - WP.C

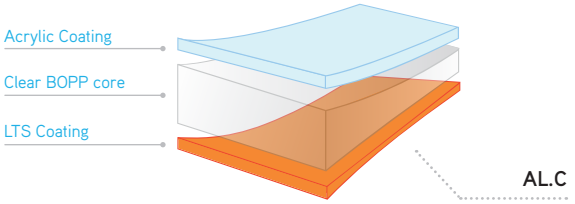
03

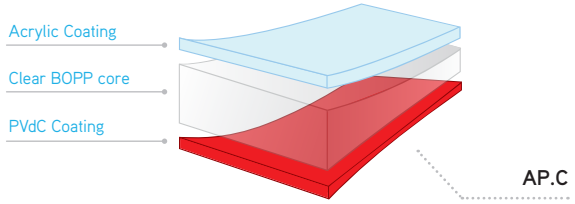
VCOAT® COATED FILM RANGE

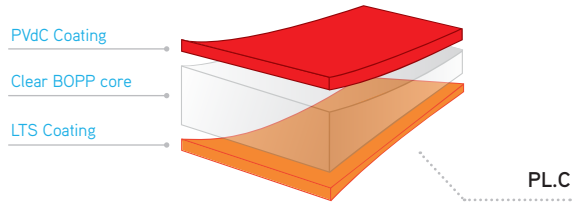
OVERVIEW TRANSPARENT COATED FILMS

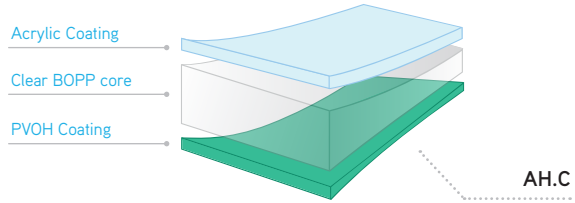


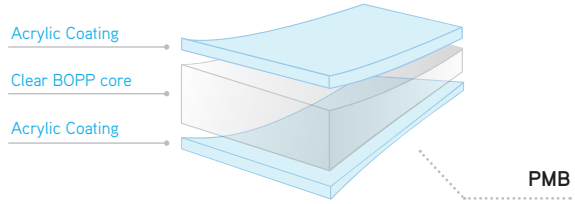












PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	
Secant Modulus 100%	MD		DIN EN ISO 527-1/3
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		
	dynamic		DIN EN ISO 8295-04
	dynamic		
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122

CODE	A1.CT		AA.C							AL.C				AP.C					PL.C			AH.C		PMB			
COATING TYPE	ONE SIDE ACRYLIC - ONE SIDE TREATED		ACRYLIC - ACRYLIC							ACRYLIC-LTS				ACRYLIC-PVdC					PVdC-LTS			ACRYLIC-PVOH		PREMADE BAG			
	20	30	20	25	30	35	40	50	60	20*	25	30	40	21	26	32	42	52	21	26	32	21	25	30	35	40	50
	18,40	27,60	18,40	23,00	27,60	32,20	36,80	46,00	55,20	18,40	23,00	27,60	36,80	19,74	24,44	30,08	39,48	48,88	19,74	24,44	30,08	17,70	23,00	27,60	32,20	36,80	46,00
	54,35	36,26	54,35	43,48	36,26	31,05	27,17	21,73	18,12	54,35	43,48	36,26	27,17	50,66	40,92	33,24	25,33	20,46	50,66	40,92	33,24	56,50	43,48	36,23	31,05	27,17	21,73
	170		170							170				170					170			170		170			
	280		280							280				280					280			280		280			
	220		220							220				220					220			220		220			
	80		80							80				80					80			80		80			
	110		110							110				110					110			110		110			
	1900		1900							1900				1900					1900			1900		1900			
	88		88							85				98					98			88		88			
	1,4	1,6	1,4	1,5	1,6	1,7	1,9	2,0	2,5	1,4	1,5	1,6	1,9	1,8	2,0	2,1	2,5	3,0	1,4	1,6	1,8	1,5	1,5	1,60	1,70	1,90	2,00
	4		4							4				4					4			4		4			
	2		2							2				2					2			2		2			
	Acr/Acr ~ 90		Acr/Acr ~ 90							Acr/Acr ~ 90				Acr/Acr ~ 90					LTS/LTS ~ 70			Acr/Acr ~ 90		Acr/Acr ~ 90			
										LTS/LTS ~ 70				PVdC/PVdC ~ 100													
	Acr/Acr ≥ 200		Acr/Acr ≥ 200							Acr/Acr ≥ 200				Acr/Acr ≥ 200								Acr/Acr ≥ 200		Acr/Acr ≥ 200			
										LTS/LTS ≥ 150				PVdC/PVdC ≥ 200					LTS/LTS ≥ 150								
	Acr/Acr 0.25		Acr/Acr 0.25							Acr/Acr 0,25				Acr/Acr 0,25					PVdC/PVdC 0,35			Acr/Acr 0,25		Acr/Acr 0,25			
	Acr/Met 0.20		Acr/Met 0.20							Acr/Met 0,20				Acr/Met 0,20					PVdC/Met 0,25			Acr/Met 0,20		Acr/Met 0,20			
										LTS/LTS 0,40				PVdC/PVdC 0,35					LTS/LTS 0,40								
										LTS/Met 0,30				PVdC/Met 0,25					LTS/Met 0,30								
	950	750	950	850	750	650	600	550	500	950	850	750	600	20	20	20	20	20	15	15	15	1		750	650	600	550
	5,5	4,5	5,5	5,0	4,5	4,0	3,5	2,5	2,0	5,5	5,0	4,5	3,5	4,4	4,2	3,8	3,3	3,0	3,5	3	2,8	5		4,5	4	3,5	2,5
	1,2	1,0	1,2	1,1	1,0	0,8	0,6	0,4	0,4	1,2	1,1	1,0	0,6	0,95	0,9	0,85	0,71	0,64	0,78	0,67	0,62	1,1		1	0,8	0,6	0,4

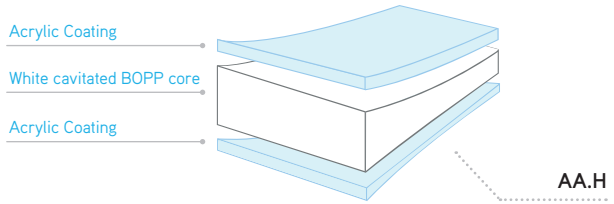
The results obtained and above properties refer to average values of laboratory tests on samples of our standard production. It is understood that this entails no obligation and/or other responsability on our part. Customer should verify the suitability of the film for its specific end use, therefore this document will not represent a product specification.

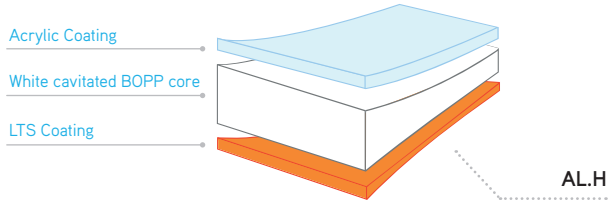
03

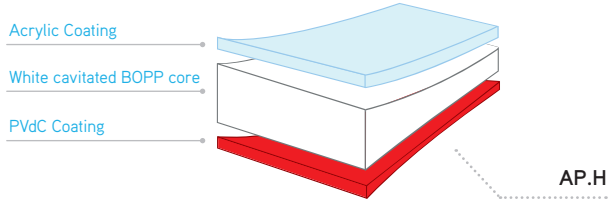
VCOAT®

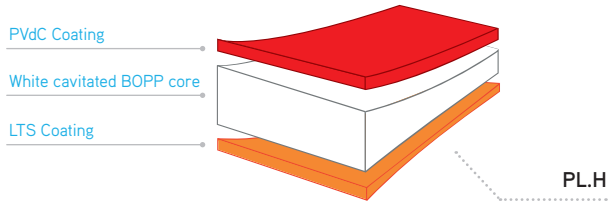
COATED FILM RANGE

OVERVIEW WHITE CAVITATED COATED FILMS









PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	
Secant Modulus 100%	MD		DIN EN ISO 527-1/3
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Optical density		%	IOQ 824.18
Opacity		%	
White Index			ASTM E 313
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		
	dynamic		DIN EN ISO 8295-04
	dynamic		
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122

CODE	AA.H				AL.H				AP.H					PL.H			
COATING TYPE	ACRYLIC - ACRYLIC				ACRYLIC-LTS				ACRYLIC-PVdC					PVdC - LTS			
	32	37	42	52	32	37	42	52	32	37	42	47	62	32	37	42	52
	24,00	27,75	31,50	39,00	24,00	27,75	31,50	39,00	24,00	27,75	31,50	35,25	46,50	24	27,75	31,5	39
	41,67	36,04	31,75	25,64	41,67	36,04	31,75	25,64	41,67	36,04	31,75	28,37	21,50	41,67	36,04	31,75	25,64
	100				100				100					100			
	200				200				200					200			
	170				170				170					170			
	50				50				50					50			
	70				70				70					70			
	1300				1300				1300					1300			
	90				90				90					90			
	0,63	0,65	0,70	0,75	0,63	0,65	0,70	0,80	0,63	0,65	0,70	0,75	0,85	0,63	0,65	0,70	0,75
	76	78	80	84	76	78	80	84	76	78	80	82	82	76	78	80	84
	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
	4				4				4					4			
	2				2				2					2			
	Acr/Acr ~ 90				Acr/Acr ~ 90				Acr/Acr ~ 90					LTS/LTS ~ 70			
					LTS/LTS ~ 70				PVdC/PVdC ~ 100								
	Acr/Acr ≥ 200				Acr/Acr ≥ 200				Acr/Acr ≥ 200					LTS/LTS ≥ 150			
					LTS/LTS ≥ 150				PVdC/PVdC ≥ 150								
	Acr/Acr 0.25				Acr/Acr 0,25				Acr/Acr 0,25					PVdC/PVdC 0,35			
	Acr/Met 0.20				ACR/Met 0,20				ACR/Met 0,20					PVdC/Met 0,25			
					LTS/LTS 0,40				PVdC/PVdC 0,35					LTS/LTS 0,40			
					LTS/met 0,30				PVdC/met 0,30					LTS/Met 0,30			
	850	800	750	680	850	800	750	680	20	20	20	20	20	15	15	15	15
	5,5	5,0	4,0	3,5	5,5	5,0	4,0	3,5	4,8	4,5	4,2	3,88	4	3,8	3,3	3	2,6
	1,20	1,10	0,90	0,80	1,20	1,10	0,90	0,90	1,03	0,95	0,90	0,83	0,85	0,82	0,78	0,67	0,60

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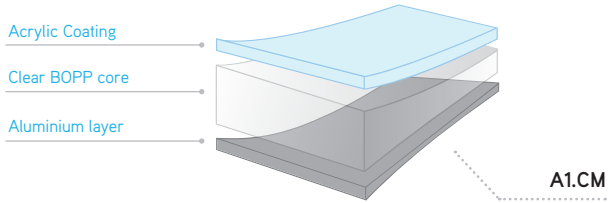
OVERVIEW COATED METALLIZED



VCOAT® COATED FILM RANGE

CODE				A1.CM	
COATING TYPE				ACRYLIC - ALUMINIUM LAYER	
PROPERTIES		**UNIT**	**TEST METHOD**		
Thickness		microns	DIN EN ISO 2286- 1/2/3	20	30
Grammage		g/m²		18,4	27,6
Yield		m²/kg		54,4	36,2
TENSILE PROPERTIES					
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3	170	
Tensile Strength	TD	N/mm²		280	
Elongation	MD	%		220	
Elongation		%		80	
Secant Modulus 100%	MD	N/mm²		110	
Secant Modulus 1%	TD	N/mm²		1900	
THERMAL PROPERTIES					
Shrinkage	MD	%	OPMA TC4a	4	
(hot air 130°C - 5')	TD	%		1	
SEALING					
S.I.T. (seal initial temperature)	untr/untr	°C	OPMA TC4	≈ 90	
Seal strength (130°C)		g/cm		≥ 200	
COEFFICIENT OF FRICTION					
untr / untr	dynamic		ASTM D1894	0,25	
untr / Met	dynamic		DIN EN ISO 8295	0,20	
OPTICAL PROPERTIES					
optical density			IOQ 824.18	2,2	
PERMEABILITIES					
OTR	23°C 0% rh	cc/(m² d atm)	ASTM D3985	300	200
WVTR	37.8°C 90% rh	g/m²d	ASTM F1249	2,0	1,3
WVTR	23°C 85% rh	g/m²d	DIN 53122	0,5	0,3

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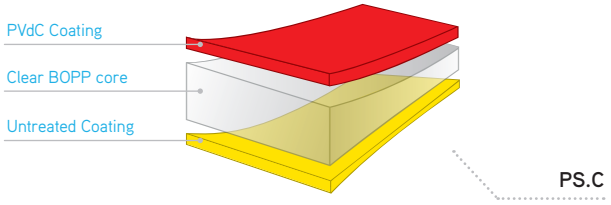
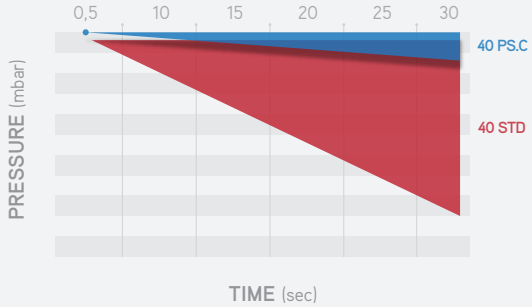
SPECIAL COATING

HIGH SEAL STRENGTH & INTEGRITY



PS.C is a potential solution for critical applications, where excellent barrier and seal integrity are required to Keep MA inside

PRESSURE LOSS TEST (40 PS.C VS 40 STD)



VCOAT® COATED FILM RANGE

03

CODE

TYPE

PS.C

PVdC COATING ON ONE SIDE

PROPERTIES		UNIT	TEST METHOD	
Thickness		microns	DIN EN ISO 2286- 1/2/3	40
Grammage		g/m²		37,60
Yield		m²/kg		26,59
TENSILE PROPERTIES				
Tensile Strength	MD	N/mm²	ASTM D 882	160
	TD	N/mm²		250
Elongation	MD	N/mm²		250
	TD	N/mm²		90
Secant Modulus 100%	MD		DIN EN ISO 527-1/3	90
Elastic Modulus 1%	MD			1900
OPTICAL PROPERTIES				
Gloss 45°		%	ASTM D 2457	95
Haze		%	ASTM D 1003	3,5
THERMAL STABILITY				
Shrinkage	MD	%	OPMA TC4a	4
(hot air 130°C - 5')	TD	%		2
SEALING				
Sealing threshold		°C	OPMA TC4b	Untr/Untr 105
Seal strength (130°C)		g/cm		Untr/untr ≥ 800
		g/cm		
COEFFICIENT OF FRICTION				
	dynamic		ASTM D 1894 DIN EN ISO 8295-04	PVdC/PVdC 0,35
	dynamic			PVdC/Met 0,25
PERMEABILITY				
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985	20
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249	3,5
WVTR	23°C-85%RH	g/m²d	DIN 53122	0,70

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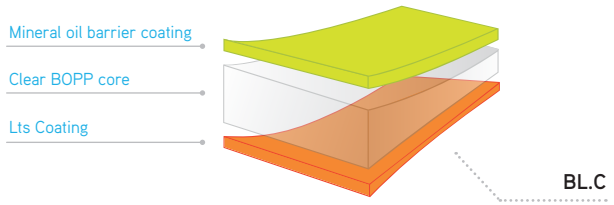
03

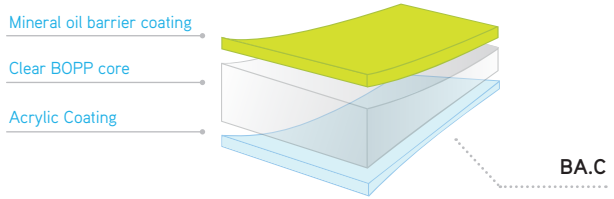
VCOAT® COATED FILM RANGE

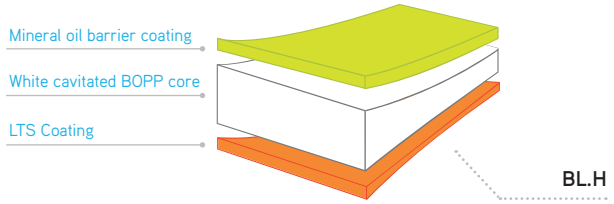
KEY PROPERTIES

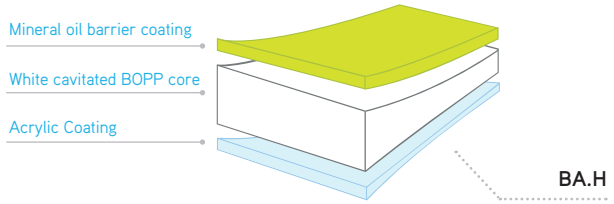
- Excellent barrier to mineral oil and grease
- Outstanding odour barrier to prevent off odour or pack to pack contamination
- Good printability
- Bisphenol free
- Mineral oil banner coating is not sealable.

MINERAL OIL BARRIER OVERVIEW









Require the dedicated brochure

PRO-TEX

PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	
Secant Modulus 100%	MD		DIN EN ISO 527-1/3
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
Optical density			
Opacity		%	
Whiteness index			
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		
	dynamic		DIN EN ISO 8295-04
	dynamic		
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122

CODE	BL.C			BA.C							BL.H			BA.H		
TYPE	MOB - LTS			MOB - ACRYLIC							MOB - LTS			MOB - ACRYLIC		
	25	30	35	20	25	30	35	40	50	60	32	37	52	37	42	52
	23,00	27,60	32,20	18,40	23,00	27,60	32,20	36,80	46,00	55,20	24	27,75	39	27,75	31,5	39
	43,48	36,23	31,06	54,35	43,48	36,26	31,05	27,17	21,73	18,12	48,67	36,04	25,64	36,04	31,75	25,64
	170			170							100			100		
	280			280							200			200		
	220			220							170			170		
	80			80							50			50		
	110			110							70			70		
	1900			1900							1300			1300		
	90			88							90			90		
	1,5	1,8	2,0		1,5	1,6	1,7	1,9	2,0	2,5						
											0,63	0,65	0.75	0,65	0,7	0,75
											76	78	84	78	80	84
											85	85	85	85	85	85
	4			4							4			4		
	2			2							2			2		
				Acr/Acr ~ 90										Acr/Acr ~ 90		
	LTS/LTS ~ 70										LTS/LTS ~ 70					
				Acr/Acr ≥ 200										Acr/Acr ≥ 200		
	LTS/LTS ≥ 150										LTS/LTS ≥ 150					
	MOB/MOB 0,25			MOB/MOB 0.25							MOB/MOB 0,25			MOB/MOB 0,25		
	MOB/Met 0,20			MOB/Met 0.20							MOB/Met 0,20			MOB/Met 0,20		
	LTS/LTS 0,40			LTS/LTS 0,40							LTS/LTS 0,40			LTS/LTS 0,40		
	LTS/Met 0,30			LTS/Met 0,30							LTS/Met 0,30			LTS/Met 0,30		
	850	750	650	950	850	750	650	600	550	500	850	800	680	800	750	680
	5,0	4,5	4,0	5,5	5,0	4,5	4,0	3,5	2,5	2,0	5,5	5	3.5	5	4	3,5
	1,10	1	0,80	1,2	1,1	1,0	0,8	0,6	0,4	0,4	1,2	1	0.8	1	0,9	0,8

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VIBAC® GROUP

VCOAT®

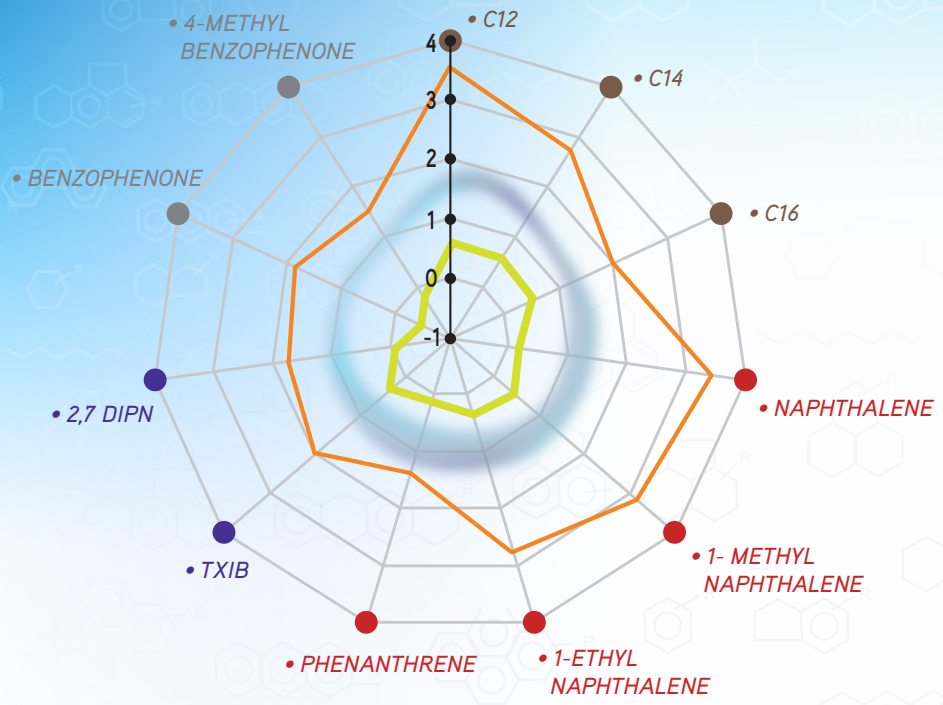
PRO-TEX MOSH/MOAH PROTECTOR

SNAPSHOT ON MINERAL OIL

BARRIER TO MINERAL OIL

INFOGRAPHIC

Log maximum permeation rate (40 days at 40°C)



Data are based on studies carried out by Fraunhofer IVV Institute (PA/4913/16)
Testing protocol and data are available upon request

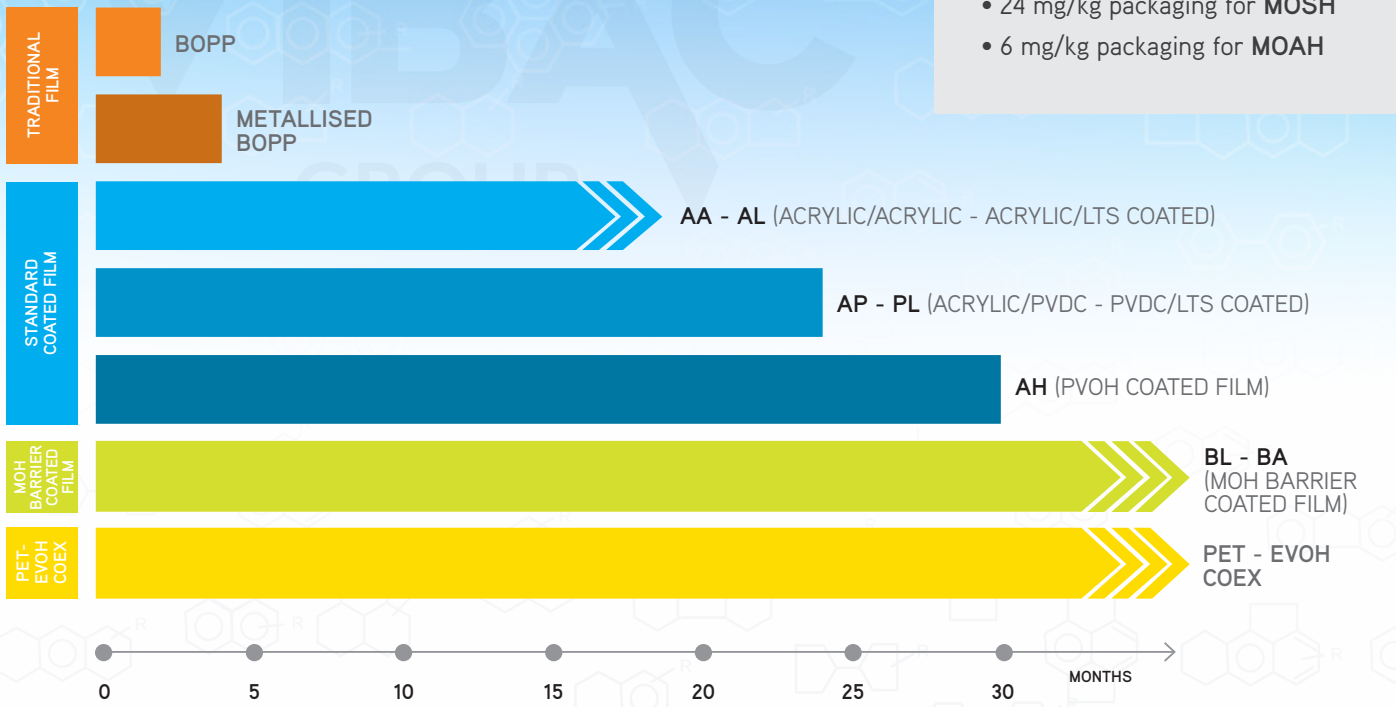
A RECENT STUDY SHOWED THAT 83% OF THE PRODUCTS TESTED ARE CONTAMINATED BY MINERAL OILS.

MINERAL OIL

- MOSH
  - C12
  - C14
  - C16
- MOAH
  - NAPHTHALENE
  - 1- METHYL NAPHTHALENE
  - 1-ETHYL NAPHTHALENE
  - PHENANTHRENE
- INK ADDITIVE
  - TXIB
  - 2,7 DIPN
- PHOTO INITIATOR
  - BENZOPHENONE
  - 4-METHYL BENZOPHENONE

BARRIER TO MINERAL OIL

- TRADITIONAL FILM
- STANDARD COATED FILM
- MOH BARRIER COATED FILM



Data are based on studies carried out by Fraunhofer IVV Institute (PA/4913/16) and Ircpack Srl (RT 13-1057)
Testing protocol and data are available upon request

THE THIRD DRAFT OF THE GERMAN ORDINANCE PROPOSED TO SET SML (SPECIFIC MIGRATION LIMIT) AS FOLLOWS:

FOODSTUFF

- 2 mg/kg for **MOSH**
- 0.5 mg/kg **MOAH**

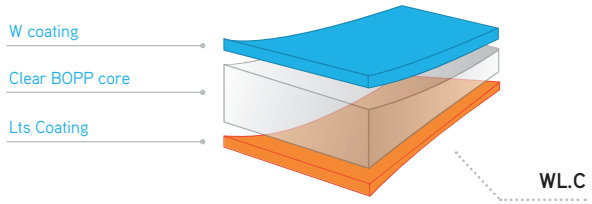
RECYCLED PAPER

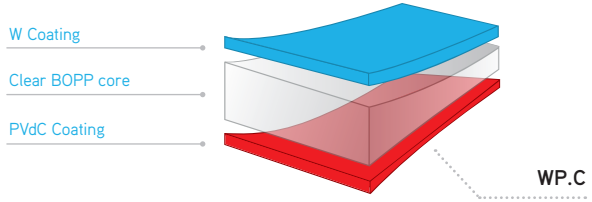
- 24 mg/kg packaging for **MOSH**
- 6 mg/kg packaging for **MOAH**

03

VCOAT® COATED FILM RANGE

IMPROVED WATER VAPOR BARRIER





PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	DIN EN ISO 527-1/3
Secant Modulus 100%	MD		
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		
	dynamic		DIN EN ISO 8295-04
	dynamic		
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122

CODE	WL.C		WP.C	
TYPE	WV BARRIER PLUS		WV BARRIER PLUS	
	25	30	26	32
	23,00	27,60	24,44	30,08
	43,48	36,23	40,92	33,24
	190		190	
	320		320	
	200		200	
	70		70	
	110		110	
	2400		2400	
	85		98	
	1,5	1,6	2,0	2,1
	4		4	
	2		2	
	Acr/Acr ~ 90		Acr/Acr ~ 90	
	LTS/LTS ~ 70		PVdC/PVdC ~ 100	
	Acr/Acr ≥ 200		Acr/Acr > 200	
	LTS/LTS ≥ 150		PVdC/PVdC > 200	
	Acr/Acr 0,25		Acr/Acr 0,25	
	Acr/Met 0,20		Acr/Met 0,20	
	LTS/LTS 0,40		PVdC/PVdC 0,35	
	LTS/Met 0,20		PVdC/Met 0,25	
	700	650	10	10
	3,0	3,0	2,0	2
	0,60	0,60	0,40	0,4

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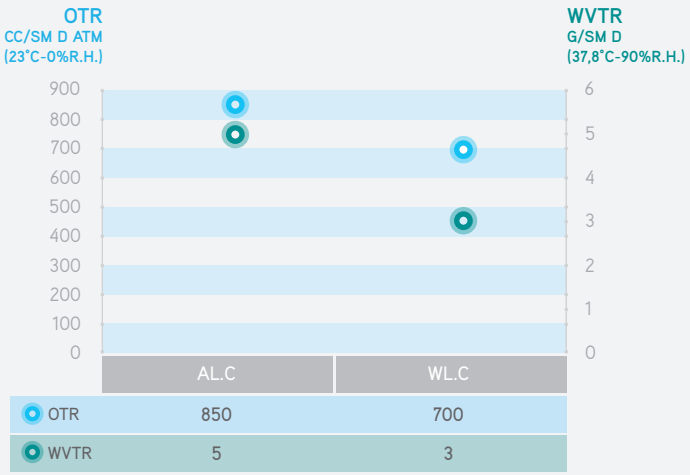
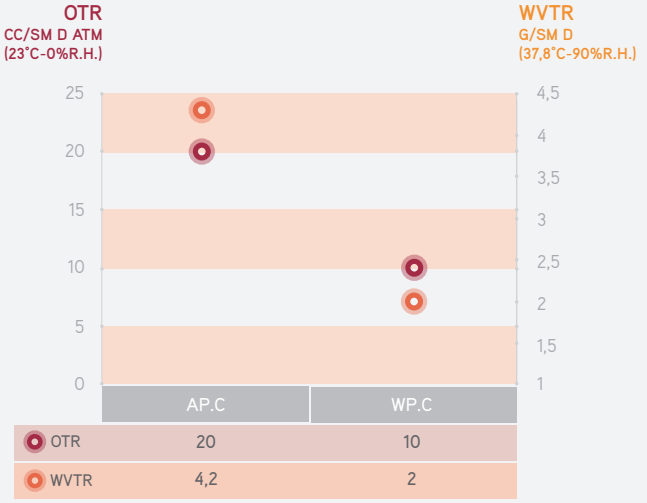
PERMEABILITY 25 AL.C VS 25 WL.C



PERMEABILITY 25 AP.C VS 25 WP.C

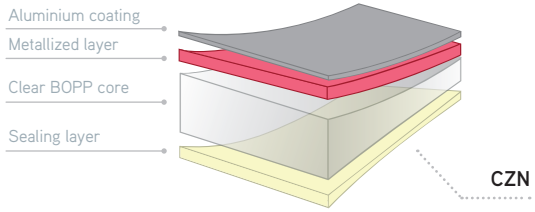


04

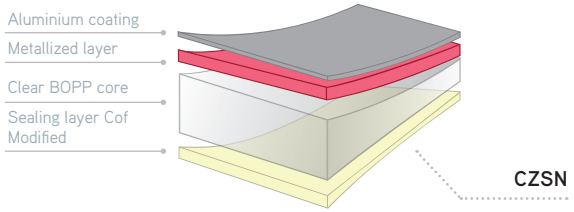
VMET METALLIZED FILM RANGE

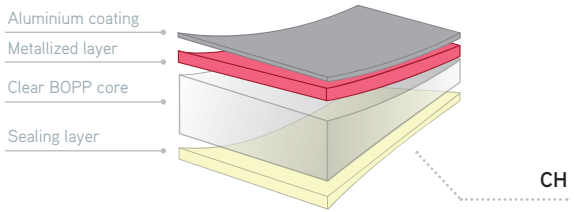
KEY PROPERTIES

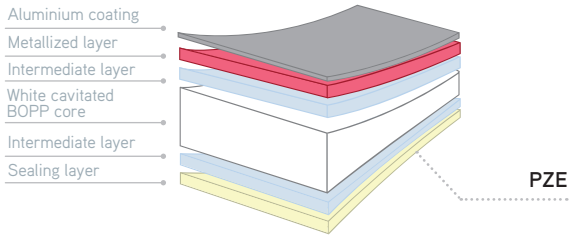
- Barrier to light
- Barrier to oxygen
- Barrier to water vapor
- Shiny appearance on printing

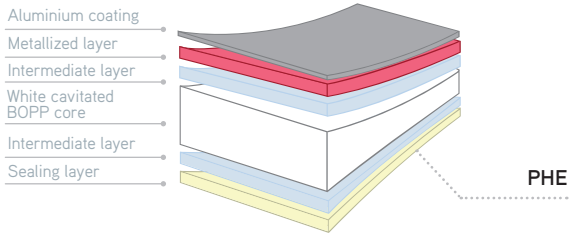


OVERVIEW METALLIZED BOPP FILMS









PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3
Tensile Strength	TD	N/mm²	
Elongation	MD	%	
Elongation	TD	%	
Secant Modulus 100%	MD	N/mm²	
Secant Modulus 1%	TD	N/mm²	
THERMAL PROPERTIES			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
S.I.T. (seal initial temperature)	untr/untr	°C	OPMA TC4
Seal strength (130°C)		g/cm	
COEFFICIENT OF FRICTION			
untr / untr	dynamic		ASTM D1894
untr / Met	dynamic		DIN EN ISO 8295
OPTICAL PROPERTIES			
optical density			
PERMEABILITIES			
OTR	23°C 0% rh	cc/(m² d atm)	ASTM D3985
WVTR	37.8°C 90% rh	g/m²d	ASTM F1249
WVTR	23°C 85% rh	g/m²d	DIN 53122

CODE	CZN						CZSN		CH				PZE	PHE
BASE	TRANSPARENT												WHITE CAVITATED	
TYPE	STANDARD BARRIER						STANDARD BARRIER LOW CONSISTENT C.O.F.		ENHANCED BARRIER				STANDARD BARRIER	ENHANCED BARRIER
	15	18*	20	25	30	35	15	20	15	20	30	35	38	38
	13,7	16,4	18,2	22,8	27,3	31,9	13,7	18,2	13,7	18,2	27,3	31,9	23,6	23,6
	73,3	61,1	55,0	44,0	36,6	31,4	73,3	55,0	73,3	55,0	36,6	31,4	42,4	42,4
	160				155		160		160		155		85	85
	300						300		300				170	170
	200		210		230		200	210	200		230		130	130
	70						70		70				50	50
	100				95		100		100		95		70	70
	1900						1900		1900				1200	1200
	4						4		4				4	4
	1						1		1				1	1
	FOR COLD- AND HEAT-SEAL						NOT FOR COLD-SEAL		FOR COLD- AND HEAT-SEAL				FOR COLD- AND HEAT-SEAL	
	~ 105						~ 105		~ 105				~ 105	~ 105
	≥ 150				≥ 200		≥ 150		≥ 150		≥ 200		≥ 130	≥ 130
	0,55						0,25		0,55				0,45	0,45
	0,30						0,20		0,3				0,30	0,30
	2.2						2.2		2.2				2.1	2.1
	80						80		50				120	50
	0,65						0,65		0,30				0,90	0,55
	0,15						0,15		0,07				0,22	0,14
NOTE							DON'T USE CORONA TREATMENT BEFORE PRINTING OR LAMINATION!							

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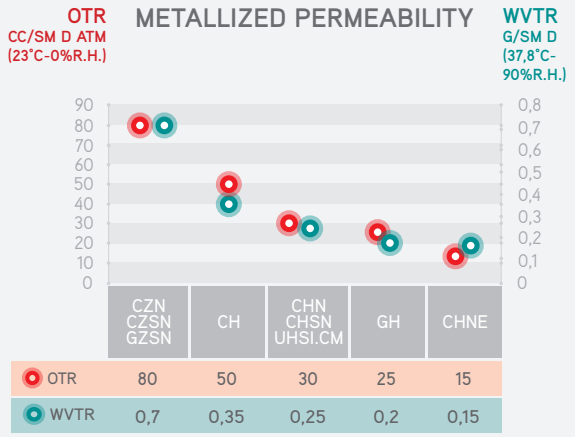
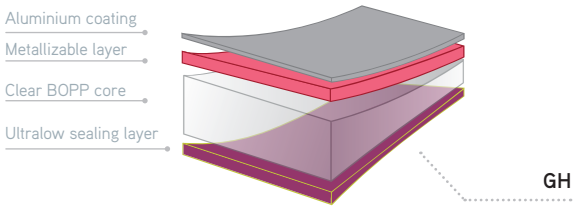
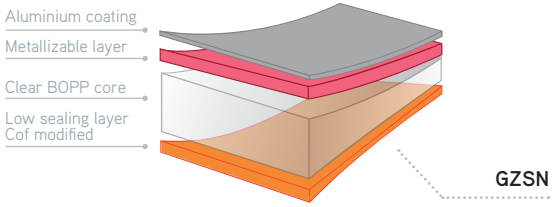


SPECIAL METALLIZZED

LOW SEALABLE METALLIZED FILM





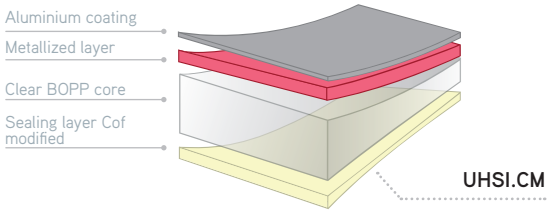
VMET METALLIZED FILM RANGE

CODE				GZSN			GH	
BASE				TRANSPARENT			TRANSPARENT	
TYPE				STANDARD BARRIER LOW SEALABLE AND C.O.F.			HIGH BARRIER ULTRA LOW SELEABLE	
PROPERTIES		**UNIT**	**TEST METHOD**					
Thickness		microns	DIN EN ISO 2286- 1/2/3	15	20	30	20	30
Grammage		g/m²		13,7	18,2	27,3	18,2	27,3
Yield		m²/kg		73,3	55,0	36,6	55,0	36,6
TENSILE PROPERTIES								
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3	160		155	160	155
Tensile Strength	TD	N/mm²		300			280	280
Elongation	MD	%		200		230	220	230
Elongation	TD	%		70			70	70
Secant Modulus 100%	MD	N/mm²		100		95	100	95
Secant Modulus 1%	TD	N/mm²		1900			1900	1900
THERMAL PROPERTIES								
Shrinkage	MD	%	OPMA TC4a	4			4	
(hot air 130°C - 5')	TD	%		1			1	
SEALING				NOT FOR COLD-SEAL				
S.I.T. (seal initial temperature)	untr/untr	°C	OPMA TC4	~ 95			~ 80	
Seal strength (130°C)		g/cm		≥ 150		≥ 200	≥ 200	
COEFFICIENT OF FRICTION								
untr / untr	dynamic		ASTM D1894	0,25			0,4	
untr / Met	dynamic		DIN EN ISO 8295	0,20			0,25	
OPTICAL PROPERTIES								
optical density			IOQ 824.18	2.2			2	
PERMEABILITIES								
OTR	23°C 0% rh	cc/(m² d atm)	ASTM D3985	80			25	
WVTR	37.8°C 90% rh	g/m²d	ASTM F1249	0,65			0,18	
WVTR	23°C 85% rh	g/m²d	DIN 53122	0,15			0,04	

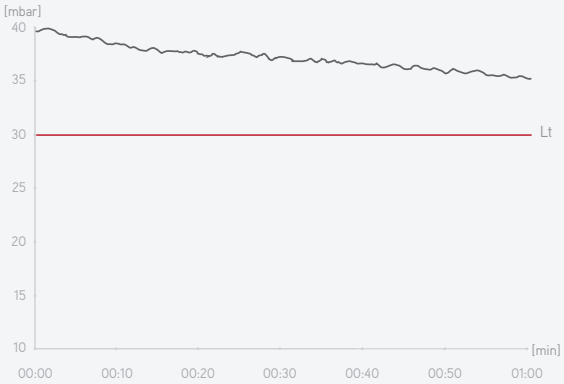
NOTE DON'T USE CORONA TREATMENT BEFORE PRINTING OR LAMINATION! FILMS ARE NOT SUITABLE FOR COLD SEAL APPLICATION!

The results obtained and above properties refer to average values of laboratory tests on samples of our standard production. It is understood that this entails no obligation and/or other responsability on our part. Customer should verify the suitability of the film for its specific end use, therefore this document will not represent a product specification.

HIGH SEAL STRENGTH & INTEGRITY METALLIZED FILM



PRESSURE LOSS TEST



VCOAT® COATED FILM RANGE

04

CODE	UHSI.CM	
BASE	TRANSPARENT	
TYPE	HIGH SEAL INTEGRITY & BARRIER LOW & CONSISTENT C.O.F.	

PROPERTIES		UNIT	TEST METHOD		
Thickness		microns	DIN EN ISO 2286- 1/2/3	20	40
Grammage		g/m²		18,4	36,4
Yield		m²/kg		54,4	27,47
TENSILE PROPERTIES					
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3	160	150
Tensile Strength	TD	N/mm²		300	280
Elongation	MD	%		250	290
Elongation	TD	%		70	90
Secant Modulus 100%	MD	N/mm²		100	90
Secant Modulus 1%	TD	N/mm²		1900	1900
THERMAL PROPERTIES					
Shrinkage	MD	%	OPMA TC4a	4	
(hot air 130°C - 5')	TD	%		2	
SEALING					
S.I.T. (seal initial temperature)	untr/untr	°C	OPMA TC4	≈ 105	
Seal strength (130°C)		g/cm		≥ 800	
COEFFICIENT OF FRICTION					
untr / untr	dynamic		ASTM D1894	0,25	
untr / Met	dynamic		DIN EN ISO 8295	0,20	
OPTICAL PROPERTIES					
optical density			IOQ 824.18	2,0	
PERMEABILITIES					
OTR	23°C 0% rh	cc/(m² d atm)	ASTM D3985	30	
WVTR	37.8°C 90% rh	g/m²d	ASTM F1249	0,225	
WVTR	23°C 85% rh	g/m²d	DIN 53122	0,05	

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	20+20 UHSI.CM	20+20 STD
Min. pressure loss (mbar)	4	2
Max. pressure loss (mbar)	7	47
Average pressure loss (mbar)	5,4	20

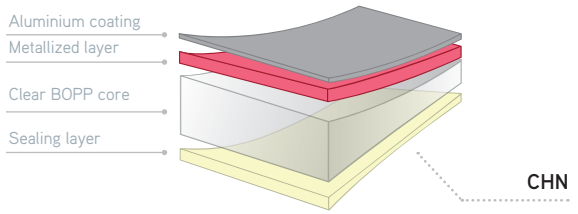
UHSI.CM is a potential solution for critical applications, where excellent seal integrity is required

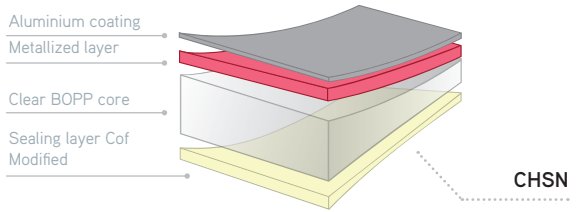
04

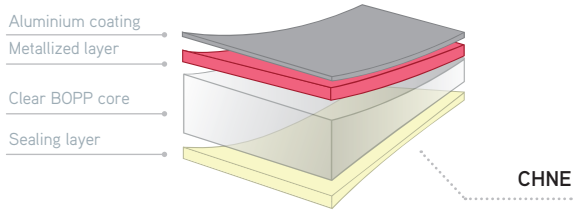
VMET

METALLIZED FILM RANGE

OVERVIEW HIGH BARRIER METALLIZED FILM







PROPERTIES		UNIT	TEST METHOD
Thickness		microns	
Grammage		g/m²	DIN EN ISO 2286- 1/2/3
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3
Tensile Strength	TD	N/mm²	
Elongation	MD	%	
Elongation	TD	%	
Secant Modulus 100%	MD	N/mm²	
Secant Modulus 1%	TD	N/mm²	
THERMAL PROPERTIES			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
S.I.T. (seal initial temperature)	untr/untr	°C	OPMA TC4
Seal strength (130°C)		g/cm	
COEFFICIENT OF FRICTION			
untr / untr	dynamic		ASTM D1894
untr / Met	dynamic		DIN EN ISO 8295
OPTICAL PROPERTIES			
optical density			IOQ 824.18
PERMEABILITIES			
OTR	23°C 0% rh	cc/(m² d atm)	ASTM D3985
WVTR	37.8°C 90% rh	g/m²d	ASTM F1249
WVTR	23°C 85% rh	g/m²d	DIN 53122

CODE	CHN		CHSN	CHNE
BASE				
TYPE	HIGH BARRIER		HIGH BARRIER LOW & CONSISTENT C.O.F.	HIGH BARRIER FOR EXTRUSION LAMINATION
	15	18	15	18
	13,7	16,4	13,7	16,4
	73,3	61,1	73,3	61,1
	160		160	160
	300		300	300
	200		200	200
	70		70	70
	100		100	100
	1900		1900	1900
	4		4	4
	1		1	1
			NOT FOR COLD-SEAL	
	~ 105		~ 105	» 105
	≥ 200		≥ 150	> 200
	0,55		0,25	0,55
	0.30		0,2	0,3
	2.5		2	2,5
	30		30	15
	0,22		0,22	0,135
	0,05		0,05	0,03
		NOTE	DON'T USE CORONA TREATMENT BEFORE PRINTING OR LAMINATION! FILMS ARE NOT SUITABLE FOR COLD SEAL APPLICATION!	

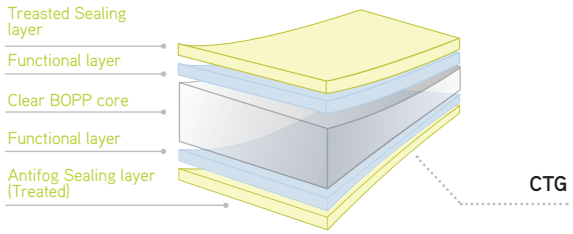
The results obtained and above properties refer to average values of laboratory tests on samples of our standard production. It is understood that this entails no obligation and/or other responsability on our part. Customer should verify the suitability of the film for its specific end use, therefore this document will not represent a product specification.

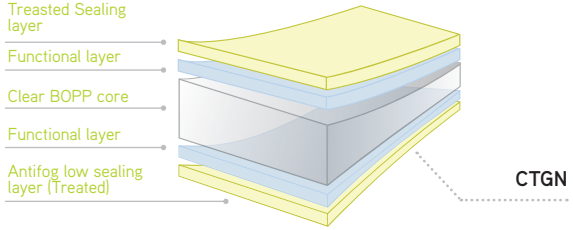
05

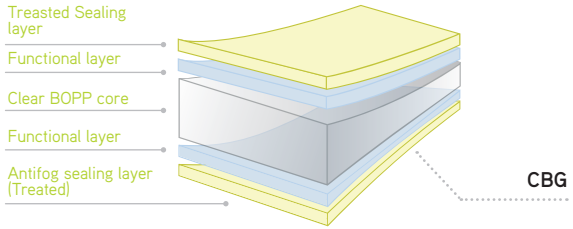
VFRESH

FRESH PRODUCE
FILM RANGE

FRESH PRODUCE OVERVIEW







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PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	%	
	TD	%	DIN EN ISO 527-1/3
Secant Modulus 100%	MD	N/mm²	
Elastic Modulus 1%	MD	N/mm²	
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		
	dynamic		DIN EN ISO 8295-04
	dynamic		
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578
ANTIFOG PROPERTIES			
Antifog Test			IOQ 824.36

CODE	CTG				CTGN				CBG
TYPE	ANTIFOG HEAT SEALABLE COEX FILM				ANTIFOG HEAT SEALABLE LOWER SIT VS CTG				ANTIFOG HEAT SEALABLE HIGH OXYGEN PERMEABILITY
	25	30	35	40	25	30	35	40	35
	22,75	27,30	31,85	36,40	22,75	27,30	31,85	36,40	31,85
	43,96	36,63	31,40	27,47	43,96	36,63	31,40	27,47	31,4
	150				150				140
	250				250				230
	220				220				280
	75				75				80
	90				90				80
	1800				1800				1400
	85				85				85
	1,8	2,0	2,0	2,3	1,8	2,0	2,0	2,3	3
	4				4				4
	2				2				2
	AF / AF ~125				AF / AF ~115				AF / AF ~125
	NAF / NAF ~125				NAF / NAF ~125				NAF / NAF ~125
	AF/AF > 180				AF/AF > 180				AF/AF > 180
	NAF/NAF > 180				NAF/NAF > 180				NAF/NAF > 180
	AF / AF= 0,25				AF / AF= 0,25				AF / AF= 0,25
	AF / Met= 0,20				AF / Met= 0,20				AF / Met= 0,20
	NAF / NAF= 0,25				NAF / NAF= 0,25				NAF / NAF= 0,25
	NAF / Met= 0,20				NAF / Met= 0,20				NAF / Met= 0,20
	2150	1800	**1600**	1400	2150	1800	**1600**	1400	**2600**
	7	6,5	6	5	7	6,5	6	5	7,5
	1,5	1,4	1,3	1,1	1,5	1,4	1,3	1,1	1,6
	38				38				38
	D/E				D/E				D/E

WHAT MUST BE CONSIDERED WHEN DESIGNING A MINIMALLY PROCESSED VEGETABLE PACKAGING

Consumer requirements

- Safety
- Convenience
- Freshness
- Quality
- Sustainability
- Economic

Produce Respiration Rate

Marketing

Packaging Technologies

- Polymer
- Converting
- Filling Machine requirements

AF : Antifog Sealing layer **NAF**: Treated Sealing Layer

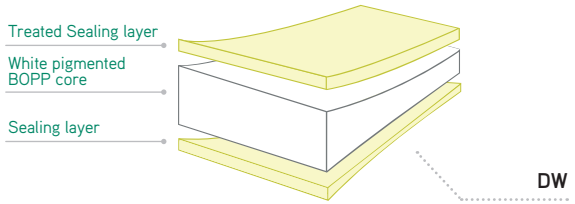
06

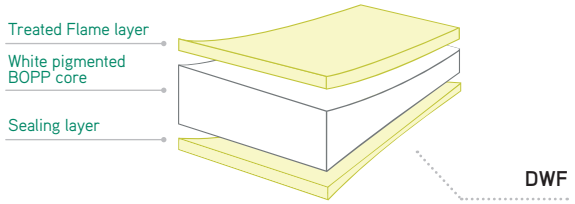
WHITE SOLID AND CAVITATED FILM RANGE

KEY PROPERTIES SOLID WHITE

- Outstanding whiteness and opacity
- Superior printing characteristics (whiteness improves printing chromatic performance)

OVERVIEW UNCOATED SOLID WHITE FILMS





PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Density (indicative)		g/cm3	
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3
	TD	N/mm²	
Elongation	MD	%	
	TD	%	
Secant Modulus 100%	MD	N/mm²	
Elastic Modulus 1%	TD	N/mm²	
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D2457
Optical Density			IOQ 824.18
Opacity		%	-
Whiteness index (before metallization)		%	ASTM E313
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
S.I.T. seal initial temperature	untr/untr	°C	OPMA TC4
Sealing threshold	tr/tr	°C	
Seal strength (130°C)		g/cm	
COEFFICIENT OF FRICTION			
untr / untr	dynamic		ASTM D1894
untr / Met	dynamic		DIN EN ISO 8295
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578

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CODE	DW				DWF			
TYPE	WHITE PIGMENT				WHITE PIGMENT FLAME TREATED (NOT SEALABLE ON TREATED SIDE)			
	20	25	30	35	20	25	30	35
	0,97				0,97			
	19,40	24,25	29,10	33,95	19,40	24,25	29,10	33,95
	51,55	41,24	34,36	29,46	51,55	41,24	34,36	29,46
	160				160			
	270				270			
	200				200			
	60				60			
	95				95			
	1800				1800			
	55		50		55		50	
	0,4		0,45	0,5	0,4		0,45	0,5
	60		64		60		64	
	90				90			
	4				4			
	1				1			
	~ 105				~ 105			
	≥ 200				≥ 200			
	0.30				0.30			
	0.20				0.20			
	2100	1900	1500	1400	2100	1900	1500	1400
	6,5	6,0	5,0	4,0	6,5	6,0	5,0	4,0
	1,4	1,3	1,0	0,9	1,4	1,3	1,0	0,9
	38				38			
	TWO SIDES TREATED FILM (DWT) SUPPLY WILL BE EVALUATED IN RELATION TO THE VOLUME INVOLVED				TYPICAL APPLICATIONS AS SINGLE WEB , WHERE IT IS NOT REQUIRED A LAP SEALING, OR IN LAMINATION FOR BISCUIT OR CONFECTIONARY APPLICATION. PRODUCT AVAILABLE ON REQUEST. PRODUCTION WILL BE EVALUATED IN RELATION TO QUANTITY AND WIDTH.			

06

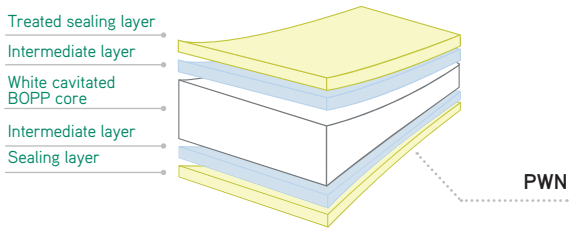
VIFAN

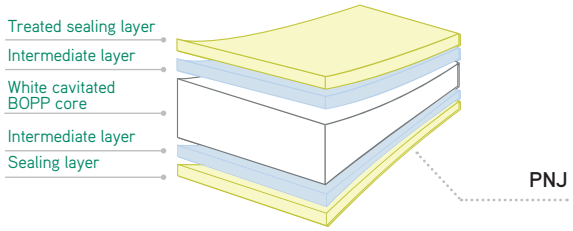
SOLID AND WHITE CAVITATED FILM RANGE

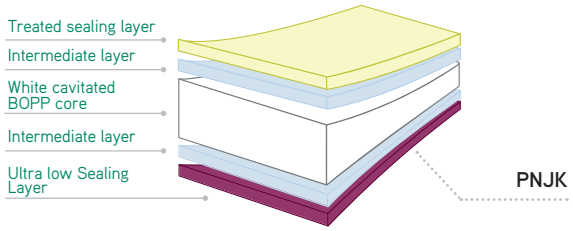
KEY PROPERTIES WHITE CAVITATED

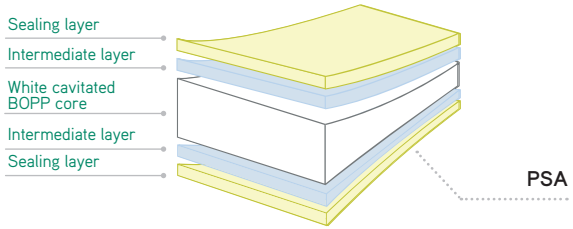
- Outstanding whiteness and opacity Superior printing characteristics
- (whiteness improves printing chromatic performance)
- High and intermediate density (0,75 – 0,62 g/cm3)
- Wide sealing range due to low sealing initiation temperature (PNJK)
- Consistent COF and hot slip performance (PNJK)

OVERVIEW UNCOATED WHITE CAVITATED FILMS









PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Density (indicative)		g/cm3	
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D1894 DIN EN ISO 527-1/3
	TD	N/mm²	
Elongation	MD	%	
	TD	%	
Secant Modulus 100%	MD	N/mm²	
Elastic Modulus 1%	TD	N/mm²	
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D2457
Optical Density			IOQ 824.18
Opacity		%	-
Whiteness index (before metallization)		%	ASTM E313
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
S.I.T. seal initial temperature	untr/untr	°C	OPMA TC4
Sealing threshold	tr/tr	°C	
Seal strength (130°C)		g/cm	
COEFFICIENT OF FRICTION			
untr / untr	dynamic		ASTM D1894
untr / Met	dynamic		DIN EN ISO 8295
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578

CODE	PWN	PNJ			PNJK				PSA				
TYPE	WHITE CAVITATED												
	38	35	40	50	30	35	40	45	30	35	40	50	60
	0,62	0,73			0,75				0,75				
	23,56	25,55	29,20	36,50	22,50	26,25	30,00	33,75	22,50	26,25	30,00	37,50	45,00
	42,44	39,14	34,25	27,40	44,44	38,10	33,33	29,63	44,44	38,10	33,33	50,50	43,90
	85	100			100				100				
	170	200			200				200				
	130	170			170				170				
	50	50			50				50				
	70	70			70				70				
	1100	1300			1300				1300				
	90	85			85				85				
	0,65	0,7	0,75	0,8	0,65	0,7	0,75	0,75	0,65	0,65	0,70	0,8	0,85
	78	80	82	84	78	80	82	82	78	78	80	84	87
	80	85			85				85				
	4	4			4				4				
	1	1			1				1				
	~ 105	~ 105			~ 80-85								
	≥ 125	~ 125			~ 125				ONLY FOR COLD-SEAL				
	≥ 130	> 130			≥ 130								
	0,4	0,3			0,3				0,5				
	0,3	0,25			0,2				0,35				
	38	38			38				38				

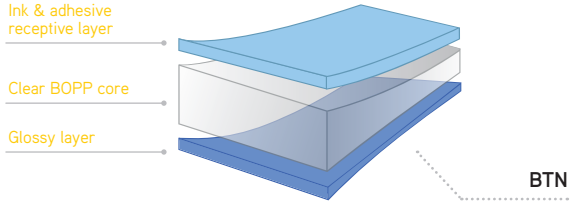
The results obtained and above properties refer to average values of laboratory tests on samples of our standard production. It is understood that this entails no obligation and/or other responsability on our part. Customer should verify the suitability of the film for its specific end use, therefore this document will not represent a product specification.

07

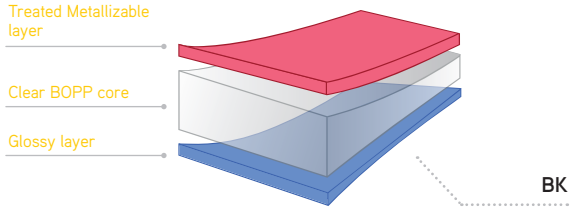
VIFAN

TRANSPARENT FILM RANGE

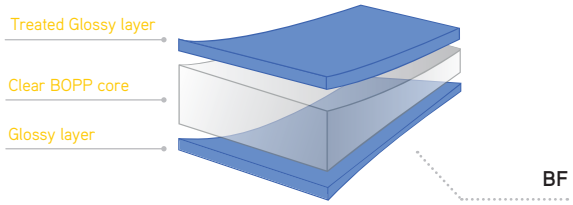
OVERVIEW NOT SEALABLE FILMS



BTN



BK



BF

PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	
Secant Modulus 100%	MD		DIN EN ISO 527-1/3
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
COEFFICIENT OF FRICTION			
untr / untr untr / Met	dynamic		ASTM D 1894 DIN EN ISO 8295-04
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578

CODE	BTN			BK			BF
TYPE	NOT SEALABLE FILM			HIGH ADHESION NOT SEALABLE FOR METALLIZATION			GLOSSY NOT SEALABLE FILM
	20	25	30	18	30	35	35
	18,20	22,75	27,30	16,38	27,30	31,85	31,85
	54,95	43,96	36,63	61,05	36,63	31,40	31,40
		160			160		160
		290			290		290
		180			180		180
		60			65		65
		110			110		110
		2000			200		2000
		85			85		95
	1,2	1,3	1,4	1,8	2,0	2,1	0,8
		4			4		4
		1			1		1
		0,40			0,40		0,40
		0,25			0,25		0,25
	1900	1600	1300				
	7,0	6,0	5,0				
	1,5	1,3	1,0				
		38			38		38

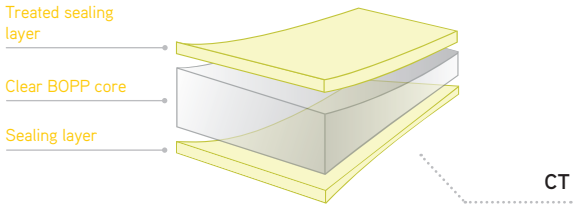
The results obtained and above properties refer to average values of laboratory tests on samples of our standard production. It is understood that this entails no obligation and/or other responsability on our part. Customer should verify the suitability of the film for its specific end use, therefore this document will not represent a product specification.

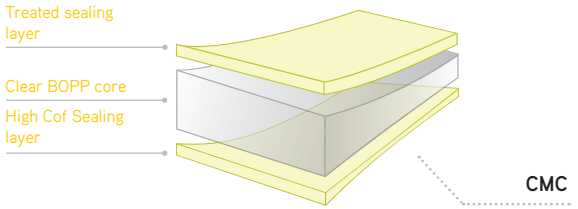
07

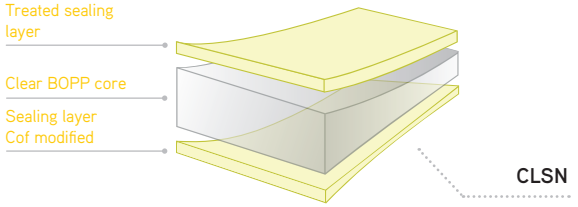
VIFAN

TRANSPARENT FILM RANGE

OVERVIEW TRANSPARENT SEALABLE FILM







PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	%	
	TD	%	
Secant Modulus 100%	MD	N/mm²	DIN EN ISO 527-1/3
Elastic Modulus 1%	MD	N/mm²	
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
untr / untr untr / Met	dynamic		ASTM D 1894 DIN EN ISO 8295-04
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578

CODE	CT							CMC						CLSN
TYPE	HEAT SEALABLE COEX FILM							HIGH COF & HEAT SEALABLE COEX FILM						LOW & CONTROLLED COF
	15	20	25	30	35	40	50	15	18	20	25	30	35	20
	13,65	18,20	22,75	27,30	31,85	36,40	45,50	13,65	16,38	18,20	22,75	27,30	31,85	18,20
	73,26	54,95	43,96	36,63	31,40	27,47	21,98	73,26	61,05	54,95	43,96	36,63	31,40	54,95
	170				160	160	150	160		155		150		170
	280				270	250		300		300		300		280
	220				240	250		200		230		230		220
	80				85	90		70		70		70		80
	110				100	90		110		95		95		110
	1900				2000			1900		200		1900		1900
	85							85						85
	1,6	1,8	1,8	2,0	2,0	2,0	2,0	1,6	1,6	1,8	1,8	2,0	2,2	1,8
	4							4						4
	2							2						2
	Untr/Untr ~ 105							Untr/Untr ~ 110						Untr/Untr ~ 105
	Untr/Untr ≥ 200							Untr/Untr ≥ 180						Untr/Untr > 200
	0,3							0,6						0,3
	0,2							0,3						0,2
	2200	1900	1600	1300	1100	950	750	2200	2100	1900	1600	1300	1100	1900
	8,0	6,5	6,0	5,0	4,0	3,5	3,0	8,0	7,0	6,5	6,0	5,0	4,0	6,5
	1,7	1,4	1,3	1,0	0,9	0,7	0,6	1,7	1,6	1,4	1,3	1,1	0,9	1,4
	38							38						38

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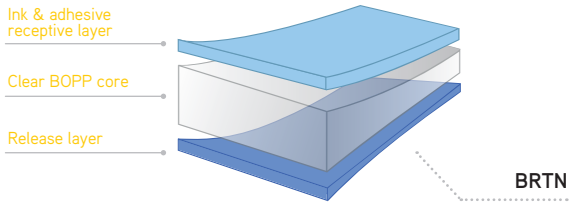
SPECIAL NOT SEALABLE

RELEASE FILM



CODE				BRTN	
TYPE				RELEASE FILM FOR COLD SEAL	
PROPERTIES		**UNIT**	**TEST METHOD**		
Thickness		microns	DIN EN ISO 2286- 1/2/3	14	20
Grammage		g/m²		12,74	18,20
Yield		m²/kg		78,49	54,95
TENSILE PROPERTIES					
Tensile Strength	MD	N/mm²	ASTM D 882	160	
	TD	N/mm²		300	
Elongation	MD	N/mm²		170	
	TD	N/mm²	DIN EN ISO 527-1/3	60	
Secant Modulus 100%	MD			115	
Elastic Modulus 1%	MD			2100	
OPTICAL PROPERTIES					
Gloss 45°		%	ASTM D 2457	85	
Haze		%	ASTM D 1003	1,9	1,9
THERMAL STABILITY					
Shrinkage	MD	%	OPMA TC4a	4	
(hot air 130°C - 5')	TD	%		1	
COEFFICIENT OF FRICTION					
untr / untr	dynamic		ASTM D 1894 DIN EN ISO 8295-04	0,20	
untr / Met				0,20	
CLING LEVEL					
Untr/cold seal		g/25 mm	IOQ 824.100	CLING LEVEL (HENKEL 22-861) INTERNAL METHOD = 60	
TREATMENT					
surface tention	dynes/cm		ASTM D2578	38	

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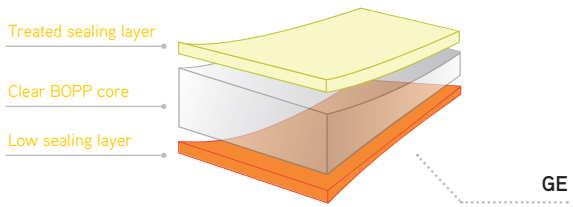
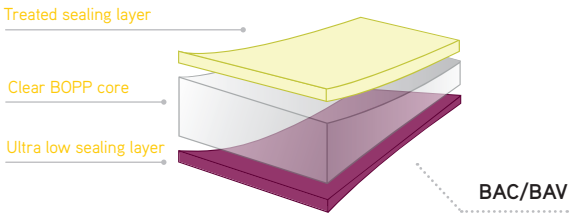
OVERVIEW LOW SEALABLE FILM





VIFAN TRANSPARENT FILM RANGE

CODE				GE	BAC/BAV			
TYPE				LOW SEALABLE & CONTROLLED COF	ULTRA LOW SEALABLE & CONTROLLED COF			
PROPERTIES		**UNIT**	**TEST METHOD**					
Thickness		microns	DIN EN ISO 2286- 1/2/3	25	20	25	30	50
Grammage		g/m²		22,75	18,20	22,75	27,30	45,50
Yield		m²/kg		43,96	54,95	43,96	36,63	21,98
TENSILE PROPERTIES								
Tensile Strength	MD	N/mm²	ASTM D 882	170	170			
	TD	N/mm²		290	280			
Elongation	MD	%		220	220			
	TD	%	DIN EN ISO 527-1/3	70	80			
Secant Modulus 100%	MD	N/mm²		100	110			
Elastic Modulus 1%	MD	N/mm²		1900	1900			
OPTICAL PROPERTIES								
Gloss 45°		%	ASTM D 2457	85	85			
Haze		%	ASTM D 1003	1,8	1,8	1,8	1,8	2,5
THERMAL STABILITY								
Shrinkage	MD	%	OPMA TC4a	4	4			
(hot air 130°C - 5')	TD	%		2	2			
SEALING								
Sealing threshold		°C	OPMA TC4b	Untr/Untr ~ 95	Untr/Untr ~ 80			
Seal strength (130°C)		g/cm		Untr/Untr > 200	Untr/Untr > 200			
		g/cm						
COEFFICIENT OF FRICTION								
	dynamic		ASTM D 1894	Untr/Untr 0,25	Untr/Untr 0,25			
	dynamic			Untr/Met 0,2	Untr/Met 0,2			
	dynamic		DIN EN ISO 8295-04		Tr/Tr 0,16 only for BAC			
	dynamic				Tr/Met 0,10 only for BAC			
PERMEABILITY								
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985	1600	1900	1600	1500	750
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249	6,0	6,5	6	5	3
WVTR	23°C-85%RH	g/m²d	DIN 53122	1,3	1,4	1,3	1	0,6
TREATMENT								
surface tention	dynes/cm		ASTM D2578	38	38 IOQ 730.1.27 (Softal pencil) BUV = Untreated version			
				NOTE	**DON'T USE CORONA TREATMENT BEFORE PRINTING OR LAMINATION!**			

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BUV = Available Untreated version

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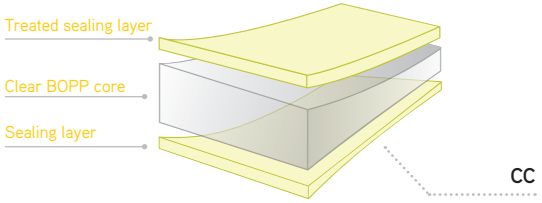
VIFAN

TRANSPARENT FILM RANGE

HIGH SEAL STRENGTH & INTEGRITY



PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	DIN EN ISO 527-1/3
Secant Modulus 100%	MD		
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold		°C	OPMA TC4b
Seal strength (130°C)		g/cm	
		g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D 1894
	dynamic		DIN EN ISO 8295-04
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
TREATMENT			
surface tention	dynes/cm		ASTM D2578

CODE	CC
TYPE	HIGH SEAL INTEGRITY AND STRENGHT
	40
	36,40
	27,47
	160
	250
	250
	90
	90
	60
	4,0
	4
	1
	Untr/Untr ≈105
	Untr/untr ≥800
	Untr/Untr 0,30
	Untr/Met 0,20
	Tr/Tr 0,20
	Tr/Met 0,10
	950
	3,5
	0,7
	38

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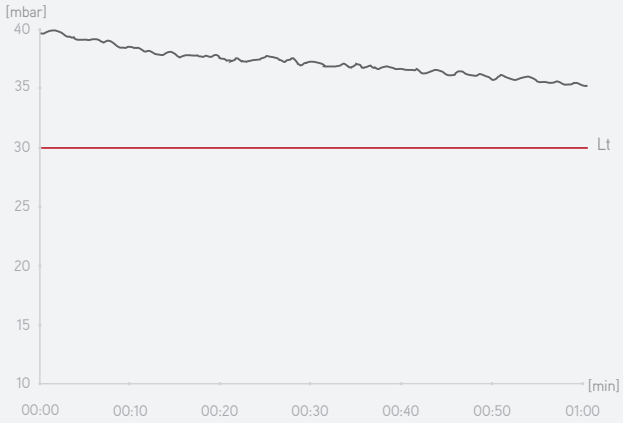
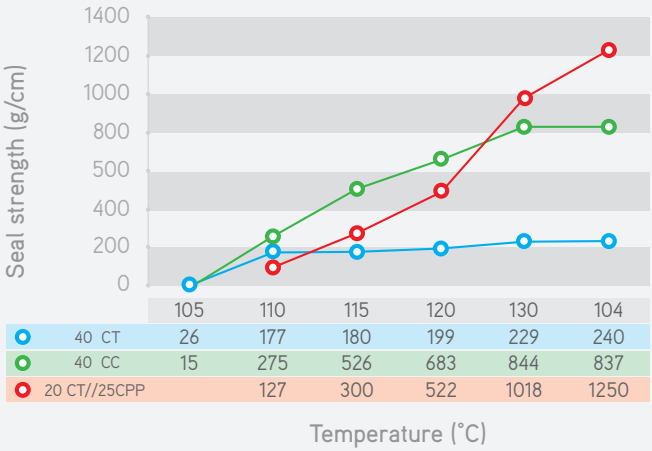
PRESSURE LOSS TEST



SEALING CURVE COMPARISON
40 CC, 40 CT AND LAMINATE 20 CT//25 CPP



08

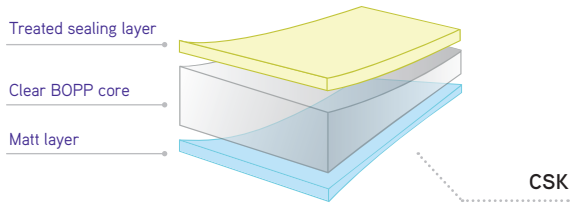
VIFAN

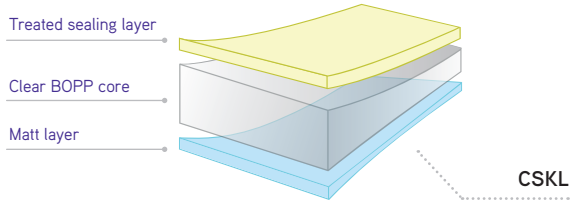
MATT FILM RANGE

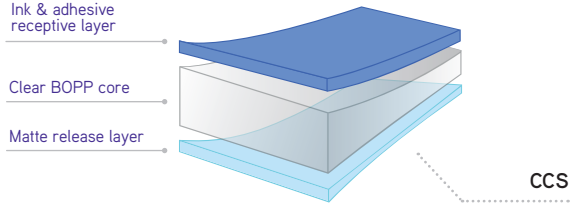
KEY PROPERTIES

- Paper like appareance
- Sealable films (CSK - CSKL)
- Realase properties

MATT FILM RANGE







PROPERTIES		UNIT	TEST METHOD
Thickness		microns	DIN EN ISO 2286- 1/2/3
Grammage		g/m²	
Yield		m²/kg	
TENSILE PROPERTIES			
Tensile Strength	MD	N/mm²	ASTM D 882
	TD	N/mm²	
Elongation	MD	N/mm²	
	TD	N/mm²	
Secant Modulus 100%	MD		DIN EN ISO 527-1/3
Elastic Modulus 1%	MD		
OPTICAL PROPERTIES			
Gloss 45°		%	ASTM D 2457
Haze		%	ASTM D 1003
THERMAL STABILITY			
Shrinkage	MD	%	OPMA TC4a
(hot air 130°C - 5')	TD	%	
SEALING			
Sealing threshold	untr / untr	°C	OPMA TC4
Seal stregth (130°C)	untr / Met	g/cm	
COEFFICIENT OF FRICTION			
	dynamic		ASTM D1894 DIN EN ISO 8295-04
PERMEABILITY			
OTR	23°C-0%RH	cm³/m² d atm	ASTM D 3985
WVTR	37.8°C-90%RH	g/m²d	ASTM F 1249
WVTR	23°C-85%RH	g/m²d	DIN 53122
CLING LEVEL			
Matt side/Cold Seal		g/25mm	IOQ 824.100
TREATMENT			
surface tention	dynes/cm		ASTM D2578

CODE	CSK			CSKL		CCS
TYPE	MATT SEALABLE FILM			HIGH COF MATT SEALABLE FILM		MATT RELEASE FILM
	20	25	30	20	30	20
	18,20	22,75	27,30	18,20	27,30	18,20
	54,95	43,96	36,63	54,95	36,63	54,35
	155			155		155
	300			300		300
	220			220		220
	70			70		70
	95			95		95
	1900			1900		2000
	9			9		9
	80			80		80
	5			5		4
	2			2		1
	~ 105			~ 105		
	≥ 190			≥ 190		
	Matt/Matt 0,25			Matt/Matt 0,35		Matt/Matt 0,25
	1900	1600	1300	1900	1300	1900
	6,5	6	5	6,5	5	6,5
	1,4	1,3	1,0	1,4	1,0	1,4
						CLING LEVEL (HENKEL 22-861) INTERNAL METHOD = 60
	38			38		IOQ 730.1.27 SOFTAL PENCIL

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NOTE

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