



BOLPHANE ^{R3}

**RENEW
REDUCE
RECYCLE**

B-Nat[®] O

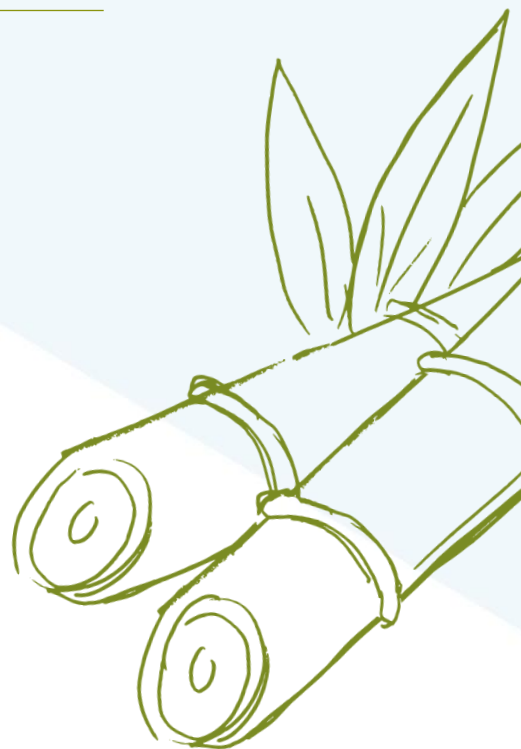
Ultrathin display shrinkfilm on the basis of a **green** polyethylene, standard multipurpose

Polyethylene from **ethanol derived from sugar cane**.

It consists of 40% of a polyethylene produced from sugarcane ethanol.

Besides coming from a renewable natural source, this green PE provides the same performances as a fossil polyethylene.

- Optimised optical properties to offer the most attractive shelf presentation.
- High cohesion strength, perfect for multipacking applications.
- Technical properties ensuring an excellent result both on manual machines and on automatic high-speed machines.
- Recyclable, contributes to minimising the carbon footprint.



Options for disposal are **recycling** (compatible with SPI code 4/PE-LD), incineration with energy recovery and landfill. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial and local regulations.

Disposal

Food contact

Complies with EU and US regulations on food contact materials. See the « Declaration of Conformity » of concerned film reference for details.

Film storage

The maximum temperature for storage is 32° C, with a maximum of 80% RH, up to one year.

B-Nat[®] O

Technical Specifications

Technical properties	Test unit	Test Method	Values		Values	
Reference			BNAT-O 15		BNAT-O 19	
Presentation						
Grade			15		19	
Roll Length- Singlewound (S)	m		2 670		2 140	
Roll Length- Centerfolded (C)	m		1 335		1 070	
Width - Singlewound (S)	mm		<u>mini</u> : 150 - <u>maxi</u> : 1 400 - <u>increment</u> : 5			
Width - Centerfolded (C)	mm		<u>mini</u> : 150 - <u>maxi</u> : 700 - <u>increment</u> : 50			
Friction coefficients (film to film)						
Static		ASTM D1894	0.40		0.35	
Dynamic		ASTM D1894	0.12		0.27	
Optical properties						
Haze	%	ASTM D1003-A	3		4	
Gloss at 20°		ASTM D2457	114		114	
Shrinkage properties			LD*	TD*	LD*	TD*
Free shrink at 93°	%	ASTM D2732	15	20	15	20
Free shrink at 120°	%	ASTM D2732	58	60	55	59
Shrink force	kg/cm²	NFT 54-125	22	28	22	30
Mechanical properties			LD*	TD*	LD*	TD*
Stiffness modulus	Mpa	ASTM D882	500	600	500	600
Elongation at break	%	ASTM D882	90	100	100	100
Tensile strength	Kg/cm²	ASTM D882	1 000	1 100	1 300	1 300
Barrier properties						
Water vapor transmission rate	g/m²/24h 38°C, 95% HR	ASTM E96	19		16	
Oxygen transmission rate	cm³/m²/24h 23°C, 0% HR	ASTM D3985	8 000		7 100	

* LD = Longitudinal Direction

* TD = Transversal Direction

Characteristics are those of a non-perforated film



The technical features of the products defined herein are given as typical values. They are the best information available to us and we believe them to be reliable. Users have to check-up that they are suitable with all the applications as performance may vary with processing conditions. Unless previous warning, BOLLORÉ has the right to change at any time the definition and technical features of its products.