PRODUCT DATA SHEET

Polyethylene

NAV101

Post-Consumer Recycle

Description

NAV101 is a transparent low density polyethylene post-consumer recycle (rLDPE) supplied in pellet form for high-end blown film applications.
NAV101 is an ideal LDPE used where sustainability and circularity matter. NAV101 is a 100% post-consumer recycle including a large part of recycled post-consumer plastic waste coming from pre-sorted municipal (household) waste. NAV101 is part of the RecyClass certificate.
Due to the nature of recyclates, some variation in color can be observed between batches.

Cas No. 9002-88-4

Typical characteristics

NAV101 can be described with following typical characteristics:

Transparent/natural color

Low odor

Available in homogenized 24-ton truckloads

Filtration: 100 µm

Applications

NAV101 is intended for following applications:

- Blown film for high-end non-food contact
- Collation shrink film packaging, lamination film and single web flexible packaging
- Non-food packaging, where transparency is key

Note: Minor quantity of BorShape™ LLDPE significantly boosts mechanical performance, brand owners and retailers meeting their sustainability goals without compromising key mechanical properties for similar packaging performance.

Physical properties

Property	Typical value *	Unit	Test method
Density	0.925	g/cm³	ISO 1183
Melt flow rate (190 °C/2.16 kg)	0.85	g/10min	ISO 1133-1
Bulk density	480	g/l	ISO 60
Moisture content [1]	≤ 0.1	%	

* Data should not be used for specification work

[1] *internal method*

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Film properties

Property	Typical value *	Unit	Test method
Tensile Modulus MD	215	MPa	ISO 527-3
Tensile Modulus TD	255	MPa	ISO 527-3
Tensile strength MD	15	MPa	ISO 527-3
Tensile strength TD	16	MPa	ISO 527-3
Tensile strain at break MD	230	%	ISO 527-3
Tensile strain at break TD	530	%	ISO 527-3
Tear resistance (Elmendorf) MD	1.6	N	ISO 6383-2
Tear resistance (Elmendorf) TD	4.3	N	ISO 6383-2
Dart drop	75	g	ISO 7765-1
Haze	29	%	ASTM D1003
Gloss (45º)	35	GU	ASTM D2457

* Data should not be used for specification work

Film properties measured on 40 µm thick blown film produced on 30 mm Collin extruder L/D = 30, die diameter 60 mm, blow up ratio (BUR) = 2.5:1, frost line height (FLH) = 2D.

Processing techniques

NAV101 is easily processed on conventional extruders.
Following extrusion parameters should be used as guidelines:

Processing setting	Typical value/range
Melt temperature	160 - 190 °C

Due to differences in screw and die head designs the optimum temperature adjustments are individual and should be evaluated for each production line.

Packaging and storage

NAV101 should be stored in dry conditions at temperatures below 50°C and protected from UV-light. Improper storage can initiate degradation, which can result in odor generation and color changes and can have negative effects on the physical properties of this product. The shelf life is a maximum of one year after production. It can be extended after selected material properties are being retested to meet the product specifications. It is recommended to measure the moisture after longer storage periods prior to processing.

Product compliance documents

Latest versions of product safety information sheets (PSIS), product safety data sheets (SDS) and other product liability documents are available in our website www.borealisgroup.com.

Sustainability aspects

Borealis is ever mindful of the impact of our products on the planet. We promote Design for Circularity (DfC) and Design for Recycling (DfR) to conserve natural resources and to reduce the environmental impact of products over their entire lifetime (including production, use phase and after phase). DfR helps ensure that material can be effectively recycled while maximizing the material performance efficiency.

Further information on sustainability and Design for Recycling (DfR) can be found from our websites www.borealisgroup.com and www.borealiseverminds.com.

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