

Post-Consumer Recyclate

Borcycle" PE R0002

Low Density Polyethylene



Accelerating Action
on Circularity

Description

Borcycle" PE R0002 is a 100% post-consumer, transparent, very low gel Low Density Polyethylene recyclate (rLDPE) supplied in pellet form for high-end blown film applications. This material is an ideal LDPE used where sustainability and circularity matter. It is not intended for use in food contact, potable water contact, pharmaceutical and medical applications. Borcycle" PE R0002 is part of the RecyClass certificate according to the European Standard EN 15343:2007. Due to the nature of recyclates, some variation in color can be observed between batches.

Cas No. 9002-88-4

Typical characteristics

Borcycle" PE R0002 can be described with following typical characteristics:

Very low gel level	Available in homogenised 24-ton truckloads
Transparent/natural colour	Filtration: 60 µm
Low odour	

Applications

Borcycle" PE R0002 is intended for following applications:

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- Blown film for high end non-food contact
- High end collation shrink packaging, lamination film and single web flexible packaging
- Non-food contact consumer packaging where transparency and toughness are key parameters

Note: Minor quantity of BorShape" LLDPE significantly boosts mechanical performances of PE R0002 helping converters, 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 1183-1
Melt flow rate (190 °C/2.16 kg)	0.35	g/10 min	ISO 1133-1
Bulk density	485	g/l	ISO 60
Moisture content ¹	d 0.1	%	

* Data should not be used for specification work

¹ internal method

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.

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Film properties

Property	Typical value *	Unit	Test method
Tensile Modulus MD	230	MPa	ISO 527-3
Tensile Modulus TD	270	MPa	ISO 527-3
Tensile strength MD	19	MPa	ISO 527-3
Tensile strength TD	20	MPa	ISO 527-3
Tensile strain at break MD	360	%	ISO 527-3
Tensile strain at break TD	570	%	ISO 527-3
Tear resistance (Elmendorf) MD	2	N	ISO 6383-2
Tear resistance (Elmendorf) TD	4.6	N	ISO 6383-2
Dart drop	110	g	ISO 7765-1
Haze	25	%	ASTM D1003
Gloss (45°)	28	GU	ASTM D2457

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Processing techniques

Borcycle" PE R0002 is easily processed on conventional extruders.

Following parameters should be used as guidelines:

Melt temperature 160 - 190 °C

Due to differences in extrusion machine design the optimum temperature adjustments are individual and should be sought for each production line.

Packaging and storage

Borcycle" PE R0002 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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