PRODUCT DATA SHEET

23.04.2025 Ed.8

Polyethylene

Borstar® FB4230

Linear Low Density Polyethylene for Film Extrusion

Description

Borstar® FB4230 is a linear low density polyethylene film grade combining good and flexible extrusion behaviour, excellent draw down and superior mechanical properties.

Blown film extrusion with Borstar® LLDPE is comparable to LDPE, but with better flexibility in film thickness range and draw down.

Cas No. 25087-34-7

Borstar® FB4230 contains:

Antioxidants

Typical characteristics

Borstar® FB4230 can be described with following typical characteristics:

Bubble stability

Easy to extrude

Good mechanical properties

Applications

Borstar® FB4230 is intended for following applications:

Food packaging

Frozen food packaging

General packaging

Pouches

Physical properties

Property	Typical value *	Unit	Test method
Density	923	kg/m³	ISO 1183-1
Melt flow rate (190 °C/5 kg)	2.00	g/10min	ISO 1133-1
Melting temperature	124	°C	ISO 11357-3

* Data should not be used for specification work

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Film properties

Property	Typical value *	Unit	Test method
Tensile stress at break MD	50	MPa	ISO 527-3
Tensile stress at break TD	40	MPa	ISO 527-3
Tensile Modulus MD[1]	300	MPa	ISO 527-3
Tensile Modulus TD[1]	420	MPa	ISO 527-3
Tensile strain at break MD	600	%	ISO 527-3
Tensile strain at break TD	775	%	ISO 527-3
Dart drop	180	g	ISO 7765-1
Instrumented puncture test, Total penetration energy	15	J/mm	ISO 7765-2
Tear resistance (Elmendorf) MD[2]	40	N/mm	ISO 6383/2
Tear resistance (Elmendorf) TD[2]	200	N/mm	ISO 6383/2
Haze	70	%	ASTM D1003
Gloss 45°	7	GU	ASTM D2457
Coefficient of friction (Dynamic)	0.40	-	ISO 8295

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[1] *Internal method*
[2] *Relative tear resistance*

Film properties measured on 40 µm blown film on 60 mm Windmöller & Hölscher extruder L/D = 30, die diameter 200 mm, die gap 1.4 mm, BUR =3:1, FLH = 3.5DD

Processing techniques

Borstar® FB4230 is easily processed on conventional extruders.
Borstar® FB4230 can be processed in most types of blown film equipment, incl. HDPE and LLDPE or LDPE extruders. The balance of draw down properties and bubble stability is superior to conventional LLDPE and LDPE. Thickness of 10 to >200µm can be processed with good bubble stability. Borstar® FB4230 is especially well suited for co-extrusion. Borstar® FB4230 will in most cases provide an improvement of production regularity. Recommended extrusion temperature is 180°C-210°C. Conventional die gaps can be used without shark skin or draw down problems. A gap of 1,0-1,5 will give the best balance between extruder pressure and physical properties in the film. Wider die gap gives higher machine direction orientation and narrow die gap may give too high extruder pressure.

Packaging and storage

Borstar® FB4230 should be stored in dry conditions at temperatures below 50°C and protected from UV-light. When correctly stored in unopened original package, and according to the above guidelines, the material has a shelf life of 12 months from the date of production. 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.

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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Disclaimer

The product(s) mentioned herein are not intended to be used for medical, pharmaceutical or healthcare applications and we do not support their use for such applications.
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It is the customer's responsibility to inspect and test our products in order to satisfy itself as to the suitability of the products for the customer's particular purpose. The customer is responsible for the appropriate, safe and legal use, processing and handling of our products.
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