

Polyethylene

Borstar® FB1490

High Density Polyethylene for Film Extrusion

Description

Borstar® FB1490 is a high molecular weight linear high density polyethylene film grade designed for high neck extrusion of thin films with superior mechanical properties, easy processability, excellent bubble stability and outstanding draw down. Borstar® FB1490 is also suitable for extrusion in low neck setup when used in a formulation.

Cas No. 25087-34-7

Typical characteristics

Borstar® FB1490 can be described with following typical characteristics:

- Drawability
- Easy processability with bubble stability
- Excellent mechanical properties

Applications

Borstar® FB1490 is intended for following applications:

- Liners
- Protective film
- Industrial liners
- Refuse sacks and liners
- Heavy duty shipping sack
- Food packaging
- T-shirt bags and boutique bags

Physical properties

Property	Typical value *	Unit	Test method
Density	949	kg/m³	ISO 1183-1
Melt flow rate (190 °C/5 kg)	0.28	g/10min	ISO 1133-1

* Data should not be used for specification work

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Film properties

Property	Typical value *	Unit	Test method
Gloss 45°	6	GU	ASTM D2457
Haze	80	%	ASTM D1003
Tensile Modulus MD ¹	820	MPa	ISO 527-3
Tensile Modulus TD ¹	1100	MPa	ISO 527-3
Tensile stress at break MD	70	MPa	ISO 527-3
Tensile stress at break TD	50	MPa	ISO 527-3
Tensile strain at break MD	290	%	ISO 527-3
Tensile strain at break TD	465	%	ISO 527-3
Tear resistance (Elmendorf) MD ²	7	N/mm	ISO 6383/2
Tear resistance (Elmendorf) TD ²	80	N/mm	ISO 6383/2
Dart drop	210	g	ISO 7765-1
Instrumented puncture test, Total penetration energy	27	J/mm	ISO 7765-2
Coefficient of friction (Dynamic)	0.27	-	ISO 8295

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¹ Internal method

² Relative Tear resistance

Tested on 15 µm blown film on 70 mm Reifenhäuser extruder with die 175 x1.2 mm, BUR =4:1, FLH = 10DD

Processing techniques

Borstar® FB1490 is specifically designed for high-neck extrusion of thin films. It can be processed on most types of blown film equipment, whether configured for high or low neck setups. For optimal balance between extruder pressure and film properties, a die gap of 1.0–1.5 mm is recommended. A wider die gap increases machine-direction orientation, while a narrower gap may result in excessive extruder pressure.

When blended with LDPE, LLDPE, or MDPE, Borstar® FB1490 can be extruded on standard low-neck equipment under normal operating conditions. The recommended extrusion temperature for high-neck setups is 190°C–210°C.

BUR = 4:1

FLH: 10 DD (neck height: 8 DD)

Packaging and storage

Borstar® FB1490 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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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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