

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/21.6 kg)	9.5	g/10min	ISO 1133-1
Melt flow rate (190 °C/5 kg)	0.26	g/10min	ISO 1133-1

* Data should not be used for specification work

Borstar® is a registered trademark of the Borealis Group



Polyethylene

Borstar® FB1490

Film properties

Property	Typical value *	Unit	Test method
Gloss 45°	7	GU	ASTM D2457
Haze	80	%	ASTM D1003
Tensile Modulus MD ¹	790	MPa	ISO 527-3
Tensile Modulus TD ¹	1100	MPa	ISO 527-3
Tensile stress at break MD	65	MPa	ISO 527-3
Tensile stress at break TD	55	MPa	ISO 527-3
Tensile strain at break MD	300	%	ISO 527-3
Tensile strain at break TD	470	%	ISO 527-3
Tear resistance (Elmendorf) MD ²	8	N/mm	ISO 6383/2
Tear resistance (Elmendorf) TD ²	110	N/mm	ISO 6383/2
Dart drop	190	g	ISO 7765-1
Instrumented puncture test, Total penetration energy	24	J/mm	ISO 7765-2
Coefficient of friction (Dynamic)	0.26	-	ISO 8295

* Data should not be used for specification work

¹ Internal method

² Relative Tear resistance

Tested on 15 µm blown film on 50 mm Alpine extruder with die 200 x 1.2 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.

Borstar® is a registered trademark of the Borealis Group