PRODUCT DATA SHEET

23.04.2025 Ed.3

Polyethylene

Borstar® FB3450

High Density Polyethylene

Description

Borstar® FB3450 is a medium-high density polyethylene with great processability

Borstar® FB3450 is well suited for multilayer coextruded films where higher stiffness and toughness than in standard LDPE and LLDPE is required

Cas No. 25087-34-7

Applications

Borstar® FB3450 is intended for following applications:

Blown film

Food packaging

General packaging film

Physical properties

Property	Typical value *	Unit	Test method
Density	945.0	kg/m³	ISO 1183-1
Melt flow rate (190 °C/5 kg)	1.2	g/10min	ISO 1133-1
Melting temperature	128	°C	ISO 11357-3

* Data should not be used for specification work

Film properties

Property	Typical value *	Unit	Test method
Tensile Modulus MD[1]	700	MPa	ISO 527-3
Tensile Modulus TD[1]	900	MPa	ISO 527-3
Tensile stress at break MD	50	MPa	ISO 527-3
Tensile stress at break TD	45	MPa	ISO 527-3
Tensile strain at break MD	600	%	ISO 527-3
Tensile strain at break TD	800	%	ISO 527-3
Dart drop	60	g	ISO 7765-1
Instrumented puncture test, Total penetration energy	8	J/mm	ISO 7765-2
Tear resistance (Elmendorf) MD[2]	16	N/mm	ISO 6383/2
Tear resistance (Elmendorf) TD[2]	170	N/mm	ISO 6383/2
Haze	75	%	ASTM D1003
Gloss 45°	6	GU	ASTM D2457
Coefficient of friction (Dynamic)	0.25	-	ISO 8295

* Data should not be used for specification work

[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

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Borstar® FB3450

Processing techniques

Borstar® FB3450 is easily processed on conventional extruders.
Borstar® FB3450 has excellent flow properties and homogenises well with lower MFR LDPE and LLDPE materials.
Borstar® FB3450 in LDPE/LLDPE blends contributes with improved bubble stability and draw down.
Borstar® FB3450 in blends should be processed in conventional film extruders in order to obtain optimal performance in extrusion and in mechanical properties. By increasing addition of Borstar® FB3450 in LDPE and LLDPE, the stiffness of the film increases accordingly. Borstar® FB3450 in blends should be processed with 10-15°C higher temperatures on the extruder/die compared to the processing temperatures on the base polymer alone. At higher blend ration or pure Borstar® FB3450, the optimal processing is obtained on a HDPE film line with HDPE conditions. The recommended melt temperatures are 200°C-210°C.

Packaging and storage

Borstar® FB3450 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.

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.
To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication; however we do not assume any liability whatsoever for the accuracy and completeness of such information.
Borealis makes no warranties which extend beyond the description contained herein. Nothing herein shall constitute any warranty of merchantability or fitness for a particular purpose.
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.
No liability can be accepted in respect of the use of any Borealis product in conjunction with any other products and/or materials. The information contained herein relates exclusively to our products when not used in conjunction with any other material unless as specifically provided for in the test methods stated above.

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