PRODUCT DATA SHEET

16.01.2026 Ed.4

Polyethylene

Borstar® HE6081

High Density Polyethylene Compound for Cable Jacketing

Description

Borstar HE6081 is based on high density polyethylene and has a specially designed additive package to give excellent track resistance.

It is also well protected against UV degradation in order to ensure outstanding weathering resistance.

Typical characteristics

Borstar HE6081 can be described with following typical characteristics:

Excellent mechanical properties
Excellent environmental stress cracking resistance (ESCR)
Heat deformation resistance
Excellent processing properties
Excellent track resistance

Applications

Borstar® HE6081 is intended for following applications:

Jacketing of Fiber Optic Cables designed for installation in high voltage power transmission lines. The compound may also be used for other applications where thermoplastic track resistant materials can be applied.

It can resist severe installation conditions and service conditions even at elevated ambient temperatures.

Specifications

Borstar® HE6081 is expected to meet the applicable requirements included in the below mentioned standards provided it is processed using sound material handling and processing practices as well as appropriate testing procedures.

IEC 60587
NBR11873 and NBR10296 (until 6kV)

Tested according to Method 2: stepwise tracking voltage. Passes class 2A 4.5kV.

Physical properties

Property	Typical value *	Unit	Test method
Density	1100	kg/m³	ISO 1183
Melt flow rate (190 °C/2.16 kg)	0.5	g/10min	ISO 1133
Melt flow rate (190 °C/5 kg)	1.7	g/10min	ISO 1133
Elongation at Break	650	%	ISO 527-2
Tensile strength (50 mm/min)	20	MPa	ISO 527-2
Brittleness temperature	<-80	°C	ASTM D746
Environmental stress crack resistance (50°C, Igepal 10%, F20)	>2000	h	IEC 60811-406
Hardness, Shore D [1]	59	-	ISO 868

* Data should not be used for specification work

[1] *15s*

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Electrical properties

Property	Typical value *	Unit	Test method
DC volume resistivity	10	P&cm	IEC 62631
Dielectric strength	20	kV/mm	IEC 60243

* Data should not be used for specification work

Processing setting	Typical value/range
Melt temperature	180-190 °C

Please contact your local Borealis representative for specific assistance.

Processing techniques

The actual conditions will depend on the type of equipment used. For the extrusion of Borstar HE6081, a screw giving good homogenization without excessive shear is recommended. Standard PE screws have proven satisfactory. Screws designed for PVC may in some cases be used with good result. The suggested melt temperature is dependent on construction and line speed. It is recommended to use smallest possible draw down ratio and gradient cooling to minimize internal stresses.

HE6081 has a tendency to absorb moisture from the atmosphere, compared to traditional HDPE jacketing compounds. Therefore drying at 80-100 °C for 4-6 h prior to extrusion is recommended.
Specific recommendations for processing conditions can be determined only when the application and type of equipment are known.

Packaging and storage

Package: Octabins

Borstar HE6081 has a shelf life of 24 months from production date if stored in unopened original packages, under dry and clean conditions at temperatures between 10 - 30 °C (50 - 85 °F). Material shelf life is affected by the storage conditions and extreme conditions influence the general material quality and performance. It is also recommended to ensure proper stock rotation by First In First Out principle.

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.
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