

Polyethylene

Borstar® HE6062A

High Density Polyethylene Compound for Cable Jacketing

Description

Borstar HE6062A is a black high density (HD) jacketing compound, which is produced with the Borealis proprietary Borstar bimodal process technology.

Borstar technology allows the manufacturing of polymers outside the traditional MFR and density range making it possible to optimize processability, reduce shrinkage and yet provide excellent physical toughness and environmental stress crack resistance (ESCR).

Borstar HE6062A contains well-dispersed carbon black to provide good weathering performance.

Typical characteristics

Borstar HE6062A can be described with following typical characteristics:

Superior processability	Low heat deformation
Excellent environmental stress cracking resistance (ESCR)	Good UV resistance
Excellent abrasion & scratch resistance	Low shrinkage
Low water permeability	Excellent surface hardness
Termite resistance	

Applications

Borstar® HE6062A is intended for following applications:

Jackets for energy cables

The physical toughness and very low water permeability of the compound make it an ideal solution especially for buried power cables. Borstar HE6062A offers a balance of properties giving advantages in manufacturing, installation and lifetime performance of energy and communication cables.

Specifications

Borstar HE6062A 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.

ASTM D1248 Type III, Class C, Category 4, Grade E8, E9, J4, W8, W9	IEC 60502 Part 2, Type ST7
DIN VDE 0207 Type 2YM3	IEC 60708
DIN VDE 0818	IEC 60794
EN 187105	IEC 60840 Type ST7
EN 50290-2-24	UL 1072 Oil resistance I & II
HD 603 S1 DMP 1, 2, 5, 7, 8	HD 620 S2, Part 1, table 4B, DMP 2, 9-10, 14-15, 17
HD 632 S2, ST7	

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Physical properties

Property	Typical value *	Unit	Test method
Density	960	kg/m ³	ISO 1183-1
Flexural modulus	1200	MPa	ISO 178
Base resin density	950	kg/m ³	ISO 1183-1
Melt flow rate (190 °C/2.16 kg)	0.05	g/10min	ISO 1133-1
Melt flow rate (190 °C/5 kg)	0.25	g/10min	ISO 1133-1
Tensile strain at break (50 mm/min)	> 500	%	ISO 527-2
Tensile strength (50 mm/min)	36	MPa	ISO 527-2
Change of Tensile Strength after ageing (48h, 100°C)	< 25	%	ISO 527-2
Change of Elongation after ageing (48h, 100°C)	< 25	%	ISO 527-2
Heat distortion (110°C)	< 30	%	ASTM D3349
Absorption coefficient ¹	320	-	ASTM D3349
Environmental stress crack resistance (50°C, Igepal 10%, F0)	> 7000	h	IEC 60811-406
Shore-D 1s	61	-	ISO 868
Pressure test at high temperature (115 °C, 6h)	< 10	%	IEC 60811-508
Resistance to slow crack growth - PENT	> 8760	h	ASTM F1473

¹ at 375 nm

* Data should not be used for specification work

Processing techniques

Borstar HE6062A provides excellent surface finish and allows a broad processing window. Borstar HE6062A is suitable for most equipment designed for PVC/PE extrusion. To minimize shrink back gradient cooling with hot water, minimum 60°C in the first part of the cooling trough, is strongly recommended.

If preheating and/or drying is used, the maximum temperature should be 90°C.

Processing setting	Typical value/range
Melt temperature	200 - 220 °C
Cooling water temperature ²	60 °C

² Minimum Temperature first part of cooling through

Please contact your local Borealis representative for specific assistance.

Packaging and storage

"Package: Bulk, Octabins, Bags

Borstar HE6062A 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."

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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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