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PRODUCT DATA SHEET

Polyethylene

HE4883

High Density Polyethylene Compound for Communication Cable Insulation

Description

HE4883 is a fully formulated Azodicarbonamide free compound for physical foamed data cable insulation. HE4883 is a high-density polyethylene compound containing blowing agent for the production of foam or foam-skin insulation.

Typical characteristics

HE4883 can be described with following typical characteristics:

Optimal cell structure	High process control
Smooth surface	Improved crushability
Easy extrusion	ADCA-free

Applications

HE4883 is intended for following applications:

Data cables

Specifications

HE4883 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 A, Category 3, Grade E1, E3	EN 50290-2-33

Physical properties

Property	Typical value *	Unit	Test method
Density [1]	949	kg/m³	ISO 1183-1
Melt flow rate (140 °C/5 kg) [2]	3.5	g/10min	ISO 1133-1
Bulk density	500 - 600	kg/m³	
Tensile strain at break (25 mm/min)	600	%	ISO 527-2
Tensile strength (25 mm/min)	23	MPa	ISO 527-2
Brittleness temperature	< -76	°C	ISO 974
Hardness, Shore D [3]	61	-	ISO 868

* Data should not be used for specification work

[1] *Method A*
[2] *Method B*
[3] *1 s*

Electrical properties

Property	Typical value *	Unit	Test method
Dielectric constant (1.9 GHz)	2.29	-	IEC 60250
Dissipation factor (1 MHz)	90 x10-6	-	IEC 60250
Dissipation factor (1.9 GHz)	175x10-6	-	IEC 60250
Dielectric constant (1 MHz)	2.33	-	IEC 60250

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Processing techniques

HE4883 can be processed over a wide range of conditions. The construction, extruder size and setup of gas injection system all play important roles for selection of proper processing conditions including the extruder temperature profile. At the gas injection point, a temperature of approximately 200-210°C is recommended for optimal activation of the cell nucleating agent, which is of the Azodicarbonamide free type. Specific recommendations for processing conditions can be determined only when the application and type of equipment are known.

Tooling
Pressure tooling is invariably required. The die diameter is a function of the level of expansion with a greater expansion requiring a smaller die. Typically die diameters 20 to 25% below the nominal insulation outer diameter are used.

Processing setting	Typical value/range
Barrel temperature 1	160 °C
Barrel temperature 2	190 °C
Barrel temperature 3	210 °C
Barrel temperature 4 [4]	210 °C
Barrel temperature 5	210 °C
Flange temperature	210 °C
Adapter temperature	210 °C
Head temperature	210 °C
Die temperature	220 °C

[4] *Gas Injection Zone*

Please contact your local technical service responsible for recommendations for particular lines.

Packaging and storage

Package: Bulk, Octabins, Bags

HE4883 has a shelf life of 18 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.

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