

## Polyethylene

# HE1116

### Description

HE1116 is a fully formulated, ADCA (Azodicarbonamide) free, compound for physical foamed coaxial cable insulations. It is based mainly on high density polyethylene and a nucleating agent to initiate the gas injection foaming process.

### Typical characteristics

HE1116 can be described with following typical characteristics:

Low attenuation over a wide range of frequencies	Uniform cell structure
Broad application window	High expansion degree to slightly above 80%
Smooth surface	No ADCA (Azodicarbonamide) in the formulation

### Applications

HE1116 is intended for following applications:

Small to medium size 75 OHM coaxial coaxial cable constructions ( type RG)

### Specifications

ASTM D1248 Type III, Class A, Category 3, Grade E1, E3                      EN 50117

EN 50290-2-37 2016

### Physical properties

Property	Typical value *	Unit	Test method
Density	956	kg/m <sup>3</sup>	ISO 1183-1/Method A
MFR 140°C/5.0kg <sup>1</sup>	7.2	g/10min	ISO 1133-1
Hardness, Shore D <sup>2</sup>	61	-	ISO 868

\* Data should not be used for specification work

<sup>1</sup> Method B  
<sup>2</sup> 1 s

### Electrical properties

Property	Typical value *	Unit	Test method
Dissipation factor (1 MHz)	100 x10-6	-	IEC 60250
Dissipation factor (1.9 GHz)	146x10-6	-	IEC 60250
Dielectric constant (1 MHz)	2.34	-	IEC 60250
Dielectric constant (1.9 GHz)	2.25	-	IEC 60250

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### Processing techniques

HE1116 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 190°C. 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 a die diameter 60% of the nominal insulation outer diameter is used.

Processing setting	Typical value/range
Barrel temperature 1	115 °C
Barrel temperature 2	170 °C
Barrel temperature 3	190 °C
Barrel temperature 4	175 °C
Barrel temperature <sup>3</sup>	175 °C
Barrel temperature <sup>4</sup>	175 °C
Barrel temperature <sup>5</sup>	175 °C
Adapter temperature	175 °C
Adapter temperature	180 °C
Head temperature	180 °C

<sup>3</sup> Zone 5

<sup>4</sup> Zone 6

<sup>5</sup> Flange

Please contact your local Borealis representative for specific assistance

### Packaging and storage

Package: Bulk, Octabins, Bags

HE1116 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](http://www.borealisgroup.com).

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