02.11.2023 Ed.3

PRODUCT DATA SHEET

Polyethylene

HE1355

Description

HE1355 is a fully formulated, high density polyethylene compound, containing an Azodicarbonamide (ADCA)-free chemical blowing agent, for telesingles.

Typical characteristics

HE1355 can be described with following typical characteristics:

ADCA-free
Consistent cell structure
Good surface finish
Good extrusion stability

Applications

HE1355 is intended for following applications:

Dry core and petroleum jelly filled cables
Foam or foam-skin insulation for telephone singles and data cable with typical expansion of 35-40%.

Specifications

HE1355 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.

EN 60811-408
EN 50290 -2-23

Physical properties

Property	Typical value *	Unit	Test method
Density [1]	950	kg/m³	ISO 1183-1
Melt flow rate (140 °C/5 kg)	1.35	g/10min	ISO 1133-1
Bulk density	500-600	kg/m³	ASTM D1895
Tensile strain at break (25 mm/min)	690	%	ISO 527-2
Tensile strength (25 mm/min)	19	MPa	ISO 527-2
Oxidation induction time (200 °C)	> 200	min	ISO 11357-6
Hardness, Shore D	63	-	ISO 868

* Data should not be used for specification work

[2] *Method A, Compound*

Electrical properties

Property	Typical value *	Unit	Test method
Dissipation factor (1 MHz)	0.0007	-	ASTM D150
Dielectric constant (1 MHz)	2.32	-	ASTM D150

* Data should not be used for specification work

Polyethylene

HE1355

Other properties

Property	Typical value *	Unit	Test method
Tensile strength (25 mm/min)[3]	12	MPa	IEC 60811-408
Tensile strain at break (25 mm/min)[3]	570	%	IEC 60811-408

* Data should not be used for specification work

[4] *Physical Properties of expanded (38 %) insulation;*

Processing techniques

HE1355 can be processed over a wide range of conditions. The adoption of correct processing conditions is important to obtain the optimum physical and electrical properties of the insulated wire. The melt temperature depends on the desired capacitance. The melt temperature should be kept within a close tolerance within +/- 1°C. Conductor preheating is important for the insulation mechanical properties and to ensure good adhesion to the conductor.

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 5-10% below the nominal insulation outer diameter are used.

Processing setting	Typical value/range
Barrel temperature 1	130 °C
Barrel temperature 2	170 °C
Barrel temperature 3	185 °C
Barrel temperature 4	210 °C
Barrel temperature 5	215 °C
Conductor preheating temperature	100 °C

Please contact your local Borealis representative for specific extruder assistance.

Packaging and storage

Package: Bulk, Octabins, Bags

HE1355 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.borealisevermindes.com.

Polyethylene

HE1355

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.

Borealis AG | Trabrennstrasse 6-8 | A-1020 Vienna | Austria
Telephone: +43 1 22 400 0* | Fax: +43 1 22 400 333
Website www.borealisgroup.com