

Polyethylene

BorSafe™ HE3490-DS-H

Black High Density Polyethylene compound for pressure pipes

Description

BorSafe™ HE3490-DS-H is a bimodal polyethylene compound produced by the advanced Borstar technology. The product contains a combination of pigments and stabilizers to ensure excellent long-term stability and UV-resistance. The product exhibits an improved resistance to chlorinated disinfectants.

BorSafe HE3490-DS-H is classified as an MRS 10.0 material (PE100) and is PE100-RC classified following the draft EN/ISO PE pressure pipe standards as currently revised.

Applications

BorSafe HE3490-DS-H is recommended for pressure pipe systems in the applications field of:

Drinking water	Industrial
Corrugated pipes	Gas distribution
Relining	Glass fibre ducts
Sheets and profiles	Cable protection pipes

Specifications

BorSafe HE3490-DS-H is intended to fulfill following International standards, when appropriate industrial manufacturing standard procedures are applied and a continuous quality system is implemented.

EN 12201	ISO 4427
EN 1555	ISO 4437
EN ISO 15494	

The product is a high-density hexene copolymer compound with an outstanding resistance to slow crack growth and used for non-conventional pipe installation technologies, like No Dig. It shows excellent resistance to rapid crack propagation. The product exhibits an improved resistance to chlorinated disinfectants especially when the expected operating temperature of the water network is on the high side and up to about 30°C. Thanks to the molecular structure, it offers outstanding extrudability and good melt strength, supporting a problem-free extrusion process to tight tolerances.

Physical Properties

Property	Typical Value	Test Method
	Data should not be used for specification work	
Density ¹	960 kg/m ³	ISO 1183-1, Method A
Melt Flow Rate (190 °C/5,5 kg)	0,25 g/10min	ISO 1133
Tensile Modulus (1 mm/min)	1.100 MPa	ISO 527-2
Tensile Strain at Break (50 mm/min)	> 600 %	ISO 527-2
Tensile Stress at Yield (50 mm/min)	25 MPa	ISO 527-2
Carbon black content	2 - 2,5 %	ISO 6964
Carbon black dispersion	< 3	ISO 18553
Oxidation Induction Time (210 °C)	> 20 min	ISO 11357-6
Resistance to rapid crack propagation (S4 test, Pc at 0 °C, Test pipe 250 mm, SDR11)	> 10 bar	ISO 13477
Resistance to slow crack growth / Strain Hardening Modulus	>= 65 bar	ISO 18488
Resistance to slow crack growth / Accelerated Notched Pipe Test (ANPT) in 2% Arkopal N-100 solution (9,2 bar, 80 °C)	>= 300 h	ISO 13479
Resistance to slow crack growth / Accelerated Full Notch Creep Test (AFNCT) in 2% Dehyton solution (4 bar, 90 °C)	>= 550 h	ISO 16770
Resistance to slow crack growth / Cracked Round Bar (CRB), converted to 14,0 mm and initial crack length 1,40 mm (12,5 MPa, 23 °C)	> 1,5 Million cycles	ISO 18489
Resistance to gas condensate	Pass	EN1555-1

¹ Compound

BorSafe is a trademark of the Borealis group.

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Processing Techniques

The actual conditions will depend on the type of equipment used.

Extrusion

Cylinder	190 - 210 °C
Die	200 - 210 °C
Head	200 - 210 °C
Melt temperature	200 - 220 °C

Specific recommendations for processing conditions can be determined only when the application and type of equipment are known. For normal conditions and applications we suggest preheating and drying. Please contact your local Borealis representative for such particulars.

Storage

BorSafe HE3490-DS-H shall be stored indoors at temperatures below 50°C and protected from UV light in unopened original packaging in clean and dry environment. It is recommended to ensure proper stock rotation by using first in – first out principle. Following aforementioned conditions the material can safely be stored for a period of up to 2 years after production. However, caution shall be taken regarding the moisture level. It is recommended to measure the moisture after longer storage periods prior to processing.

Safety

The product is not classified as dangerous.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety of the product.

Recycling

The product is suitable for recycling using modern methods of shredding and cleaning. In-house production waste should be kept clean to facilitate direct recycling.

Please see our "Safety data sheet" / "Product safety information sheet" for details on various aspects of safety, recovery and disposal of the product. For more information, contact your Borealis representative.

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Issuer:

Marketing Pipe / Norbert Jansen
Product Management / Gabriele Poinsitt

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.