PRODUCT DATA SHEET

11.07.2023 Ed.4

Polyethylene

BorSafe™ HE3490-LS-H

High Density Polyethylene Compound for Pressure Pipes

Description

BorSafe HE3490-LS-H is a bimodal polyethylene compound produced by the advanced Borstar technology.

The product is a high-density polyethylene compound in pellet form and contains a combination of stabilizers and carbon black to ensure a reliable long-term stability and UV-resistance.

BorSafe HE3490-LS-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-LS-H is intended for following applications:

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

BorSafe HE3490-LS-H is recommended for pressure pipe systems in the applications fields above.

Specifications

BorSafe HE3490-LS-H 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 12201
EN 1555
EN ISO 15494
ISO 4427
ISO 4437

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. Thanks to the molecular structure, it offers outstanding extrudability and good melt strength, supporting a problem-free extrusion process to tight tolerances.
BorSafe HE3490-LS-H pipe samples were tested per ASTM F2263 and meet CC3 chlorine categorization per ASTM D3350.

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Manufacturer website: https://www.borealisgroup.com/

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Physical properties

Property	Typical value *	Unit	Test method
Density	960.0	kg/m³	ISO 1183-1/Method A
MFR 190°C/5.0kg	0.25	g/10min	ISO 1133-1
Tensile modulus (1 mm/min)	1100	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	2.0-2.5	%	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 250mm, SDR11)	> 10	bar	ISO 13477
Strain Hardening Modulus Test (SHT)	≥ 65	MPa	ISO 18488
Accelerated Notched Pipe Test (ANPT) in 2% Arkopal N-100 solution (9,2 bar, 80 °C)	≥ 300	h	ISO 13479
Accelerated Full Notch Creep Test (AFNCT) in 2% Dehyton solution (4 MPa, 90 °C)	≥ 550	h	ISO 16770
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

* Data should not be used for specification work

Processing techniques

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

Processing setting	Typical value/range
Cylinder temperature	190 - 210 °C
Head temperature	200 - 210 °C
Die temperature	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.

Packaging and storage

BorSafe HE3490-LS-H shall be stored indoors below 50°C 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 afore-mentioned 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

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.

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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.

Regional Availability

Europe

North America

South America

For information on regional availability please contact Borealis Sales Representative.

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

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