

SABIC® HDPE B5411

HIGH DENSITY POLYETHYLENE

DESCRIPTION

SABIC® HDPE B5411 is a material with a semi-high molecular mass, additionally thermal stabilized and typically used for blow molding and sheet extrusion. This grade is combining stiffness, toughness with an high ESCR and is typically used for large bottles, cans, technical parts and toys.

This product is not intended for and must not be used in any pharmaceutical/medical applications.

TYPICAL PROPERTY VALUES

Revision 20211203

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|-------------------|--------------|
| POLYMER PROPERTIES | | | |
| Melt Flow Rate (MFR) | | | |
| at 190 °C and 5 kg | 0.40 | dg/min | ISO 1133 |
| at 190 °C and 21.6 kg | 11 | dg/min | ISO 1133 |
| Density ⁽¹⁾ | 954 | kg/m ³ | ISO 1183 |
| MECHANICAL PROPERTIES ^{(1) (2)} | | | |
| Tensile test ^{(3) (4)} | | | |
| stress at yield | 26 | MPa | ISO 527-2 |
| stress at break | 30 | MPa | ISO 527-2 |
| strain at break | 1000 | % | ISO 527-2 |
| tensile modulus | 1050 | MPa | ISO 527-2 |
| Flexural test | | | |
| Flexural modulus | 1250 | MPa | ISO 178 |
| Flexural strength | 27 | MPa | ISO 178 |
| Izod impact notched | | | |
| at 23 °C | 16 | kJ/m ² | ISO 180/A |
| at -30 °C | 14 | kJ/m ² | ISO 180/A |
| Hardness Shore D | 61 | - | ISO 868 |
| ESCR (10% Igepal CO-630), F50 | 55 | h | ASTM D1693B |
| THERMAL PROPERTIES | | | |
| Heat deflection temperature ^{(1) (2)} | | | |
| at 0.45 MPa (HDT/B) | 81 | °C | ISO 75-2 |
| Vicat Softening Temperature ^{(1) (2)} | | | |
| at 10 N (VST/A) | 127 | °C | ISO 306 |
| DSC test | | | |
| melting point | 132 | °C | ISO 11357-3 |
| enthalpy change | 205 | J/g | ISO 11357-3 |

(1) Compression moulding of test specimen according to ISO 1872-2

(2) Conditioning of test specimen: temp. 23 °C, relative humidity 50 %, 24 hours

(3) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm

(4) Speed of testing: 50 mm/min

STORAGE AND HANDLING

Polyethylenes resins (in pelletised or powder form) should be stored in such a way that it prevents exposure to direct sunlight and/or heat, as this may lead to quality deterioration. The storage location should also be dry, dust free and the ambient temperature should not exceed 50 °C. Not complying with these precautionary measures can lead to a degradation of the product which can result in colour changes, bad smell and inadequate product performance. It is also advisable to process polyethylene resins (in pelletised or powder form) within 6 months after delivery, this because also excessive aging of polyethylene can lead to a deterioration in quality.

ENVIRONMENT AND RECYCLING

The environmental aspects of any packaging material do not only imply waste issues but have to be considered in relation with the use of natural resources, the preservations of foodstuffs, etc. SABIC considers polyethylene to be an environmentally efficient packaging material. Its low specific energy consumption and insignificant emissions to air and water designate polyethylene as the ecological alternative in comparison with the traditional packaging materials. Recycling of packaging materials is supported by SABIC whenever ecological and social benefits are achieved and where a social infrastructure for selective collecting and sorting of packaging is fostered. Whenever 'thermal' recycling of packaging (i.e. incineration with energy recovery) is carried out, polyethylene -with its fairly simple molecular structure and low amount of additives- is considered to be a trouble-free fuel.

DISCLAIMER

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