

## SABIC® HDPE PCG453

High density polyethylene for Healthcare

### Description.

SABIC® HDPE grades for healthcare applications are produced under controlled conditions resulting in high product quality, consistency and a high level of purity.

SABIC® HDPE PCG453 is typically used for the injection moulding of healthcare packaging, caps and closures and other parts for medical packaging. This grade has a very high impact resistance, even at low temperatures.

### Compliance to regulations.

SABIC® HDPE PCG453 complies with the relevant monographs of the European Pharmacopoeia (EP) and the United States Pharmacopoeia (USPVI).

### Typical data.

Revision 20160329

Properties	Units SI	Values	Test methods
<b>Polymer properties</b>			
<b>Melt flow rate (MFR)</b> at 190 °C and 2.16 kg at 190 °C and 5 kg	dg/min dg/min	<b>4.7</b> <b>13</b>	ISO 1133
<b>Density</b> <sup>1)</sup>	kg/m <sup>3</sup>	<b>953</b>	ISO 1183
<b>Mechanical properties</b> <sup>1) 2)</sup>			
<b>Tensile test</b> <sup>3) 4)</sup>			ISO 527-2
stress at yield	MPa	<b>26</b>	
stress at break	MPa	<b>25</b>	
strain at break	%	<b>&gt;200</b>	
tensile modulus	MPa	<b>1100</b>	
<b>Flexural test</b>			ISO 178
Flexural modulus	MPa	<b>1200</b>	
Flexural strength	MPa	<b>26</b>	
<b>Izod impact notched</b> at 23 °C	kJ/m <sup>2</sup>	<b>4</b>	ISO 180/A
<b>Hardness Shore D</b>	-	<b>61</b>	ISO 868
<b>ESCR</b> <sup>5)</sup>	h	<b>95</b>	SABIC method
<b>Thermal properties</b>			
<b>Heat deflection temperature</b> <sup>1) 2)</sup> at 0.45 MPa (HDT/B)	°C	<b>81</b>	ISO 75-2
<b>Vicat softening temperature</b> <sup>1) 2)</sup> at 10 N (VST/A)	°C	<b>124</b>	ISO 306
<b>DSC test</b>			ISO 11357-3
melting point	°C	<b>132</b>	
enthalpy change	J/g	<b>203</b>	

- 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) Speed of testing: 50 mm/min
- 4) Test specimen according to ISO 527-2 type 1BA, thickness 2 mm
- 5) Determined in Rhodacal-DS10 at 60 °C, 2 MPa, thickness 3 mm



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**Healthcare policy.** Do not use this SABIC product in all medical applications involving any of the following medical devices in accordance with the classification criteria and definitions as outlined in annex IX of the EU council directive on medical devices (93/42/EEC of 14 June 1993 including amendments):

1. Class IIB implantable medical devices, and both short-term (not including transient use) and long term surgically invasive devices;
2. All medical devices in class III.

**Health, Safety and Food Contact regulations.** Detailed information is provided in the relevant Material Safety Datasheet and or Standard Food Declaration, available on the Internet ([www.SABIC-europe.com](http://www.SABIC-europe.com)). Additional specific information can be requested via your local Sales Office.

**Quality.** SABIC Europe is fully certified in accordance with the internationally accepted quality standard ISO 9001.

**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 Europe 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 Europe 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.** The information contained herein may include typical properties of our products or their typical performances when used in certain typical applications. Actual properties of our products, in particular when used in conjunction with any third party material(s) or for any non-typical applications, may differ from typical properties.

It is the customer's responsibility to inspect and test our product(s) in order to satisfy itself as to the suitability of the product(s) for its and its customers particular purposes. The customer is responsible for the appropriate, safe and legal use, processing and handling of all product(s) purchased from us.

Nothing herein is intended to be nor shall it constitute a warranty whatsoever, in particular, warranty of merchantability or fitness for a particular purpose.

SABIC as referred to herein means any legal entity belonging to the group of companies headed by SABIC Europe B.V.