

# Marlex® 9045

HIGH DENSITY POLYETHYLENE (HDPE)

**This high density polyethylene is an ethylene-hexene copolymer tailored for injection molding applications that require:**

- Excellent flow
- Good impact strength
- Good stiffness

**This resin meets these specifications:**

- ASTM D4976 - PE 231
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)

**Typical injection molded applications for 9045 HDPE include:**

- Thin wall food containers
- Toys and housewares
- Structural foam (with proper foaming agent)

NOMINAL PHYSICAL PROPERTIES <sup>(1)</sup>	ENGLISH	SI	TEST METHOD
<b>Density</b>	----	0.950 g/cm <sup>3</sup>	ASTM D1505
<b>Melt Index</b> , Condition 190/2.16	----	45.0 g/10 min	ASTM D1238
<b>Flexural Modulus</b> , 1 % Secant, 16:1 span: depth, 0.5 in/min	146,000 psi	1000 MPa	ASTM D790
<b>Flexural Modulus</b> , Tangent, 16:1 span: depth, 0.5 in/min	160,000 psi	1100 MPa	ASTM D790
<b>Tensile Strength at Yield</b> , 2 in/min, Type IV bar	3,500 psi	24 MPa	ASTM D638
<b>Tensile Elongation at Yield</b> , 2 in/min, Type IV bar	7 %	7 %	ASTM D638
<b>Tensile Elongation at Break</b> , 2 in/min, Type IV bar	<100 %	<100 %	ASTM D638
<b>ESCR</b> , Condition B (100 % Igepal), F <sub>50</sub>	<10 h	<10 h	ASTM D1693
<b>Notched Izod Impact</b> , 74 °F Test Temperature	0.7 ft•lbf/in	37 J/m	ASTM D256
<b>High Speed Impact Peak Energy</b> , 21.6 ft/sec, 73.4 °F, 0.125 in	13 ft•lbf	18 J	ASTM D3763
<b>High Speed Impact Total Energy</b> , 21.6 ft/sec, 73.4 °F, 0.125 in	16 ft•lbf	22 J	ASTM D3763
<b>Durometer Hardness</b> , Type D (Shore D)	63	63	ASTM D2240
<b>Vicat Softening Temperature</b> , Loading 1, Rate A	235 °F	113 °C	ASTM D1525
<b>Heat Deflection Temperature</b> , 66 psi, Method A	113 °F	45 °C	ASTM D648
<b>Heat Deflection Temperature</b> , 264 psi, Method A	154 °F	68 °C	ASTM D648
<b>Brittleness Temperature</b> , Type A, Type I specimen	< -103 °F	< -75 °C	ASTM D746

(1) The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.

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Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. Chevron Phillips Chemical Company LP does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein or the product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Further, information contained herein is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use thereof. Such questions should be investigated by the user.