For more information and technical assistance contact:

Chevron Phillips Chemical
P.O. Box 4910
The Woodlands, TX 77387-4910
800.231.1212

Marlex® Polyethylene

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

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