For more information and technical assistance contact:

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

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

# Marlex® 9010 Polyethylene

**HIGH DENSITY POLYETHYLENE (HDPE)**

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

- Good flow performance
- High impact strength
- Excellent stiffness

**Typical injection molded applications for 9010 include items such as:**

- Caps and Closures
- Lids
- Containers and Carts

**This resin meets these specifications:**

- ASTM D4976 - PE 233
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)

| Nominal Resin Properties (1) | English | SI | Method |
|---|---|---|---|
| **Density** | ---- | 0.945 g/cm$^3$ | ASTM D1505 |
| **Flow Rate** (MI, 190 °C/2.16 kg) | ---- | 10 g/10 min | ASTM D1238 |
| **Nominal Physical Properties (1)** | **English** | **SI** | **Method** |
| **Tensile Strength at Yield**, 2 in/min, Type IV bar | 3,100 psi | 21 MPa | ASTM D638 |
| **Elongation at Break**, 2 in/min, Type IV bar | 800 % | 800 % | ASTM D638 |
| **Flexural Modulus**, Tangent, 16:1 span:depth, 0.5 in/min | 154,000 psi | 1,060 MPa | ASTM D790 |
| **Flexural Modulus**, 1 % Secant, 16:1 span:depth, 0.5 in/min | 142,000 psi | 980 MPa | ASTM D790 |
| **Durometer Hardness**, Type D (Shore D) | 61 | 61 | ASTM D2240 |
| **Notched Izod Impact**, 74 °F Test Temperature | 1.0 ft•lbf/in | 54 J/m | ASTM D256 |
| **Vicat Softening Temperature**, Loading 1, Rate A | 247 °F | 120 °C | ASTM D1525 |
| **Heat Deflection Temperature**, 66 psi, Method A | 158 °F | 70 °C | ASTM D648 |
| **Heat Deflection Temperature**, 264 psi, Method A | 114 °F | 46 °C | ASTM D648 |
| **ESCR**, Condition B (100 % Igepal), $F_{50}$ | 43 h | 43 h | ASTM D1693 |
| **ESCR**, Condition B (10 % Igepal), $F_{50}$ | 20 h | 20 h | ASTM D1693 |
| **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.

Revision Date: August, 2021

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.