

# Marlex® HMN TR-942 / HMN TR-942G Polyethylene

## HIGH DENSITY POLYETHYLENE (HDPE)

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

- Wide process windows
- Excellent impact strength
- Good flow
- Good ESCR

This resin is available in two physical forms:

- Pellet form - HMN TR-942
- 35 US mesh powder - HMN TR-942G

Typical applications for HMN TR-942 and HMN TR-942G include:

- Potable water and chemical tanks
- Agricultural equipment

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) Table 2 for single use articles contacting food types I, II, IV-B, VI-A, VI-B, VII-B, and VIII. Repeated use articles contacting all food types defined in 21 CFR 176.170(c) Table 1. When contacting fatty foods of Types III, IV-A, V, VII-A, and IX described in Table 1, the finished articles are to have a volume of at least 18.9 liters (5 gallons).
- FMVSS.302 burn test
- NSF / ANSI Standard 61 for potable water (CLD 23)
- Long term UV stabilization – ASTM 2565 (Cycle 1): Greater than UV-16

Nominal Physical Properties <sup>(1), (2)</sup>	English	SI	Method
<b>Density</b>	---	0.943 g/cm <sup>3</sup>	ASTM D1505
<b>Melt Index</b> , 190 °C/2.16 kg	---	2.0 g/10 min	ASTM D1238
<b>ESCR</b> , Condition A (100 % Igepal), F <sub>50</sub>	700 h	700 h	ASTM D1693
<b>ESCR</b> , Condition A (10 % Igepal), F <sub>50</sub>	250 h	250 h	ASTM D1693
<b>Durometer Hardness</b> , Type D (Shore D)	61	61	ASTM D2240
<b>Vicat Softening Temperature</b> , Loading 1, Rate A	249 °F	120 °C	ASTM D1525
<b>Brittleness Temperature</b> , Type A, Type I specimen	-103 °F	-75 °C	ASTM D746
<b>Melting Temperature</b>	266 °F	130 °C	ASTM D3418
<b>Crystallization Temperature</b>	236 °F	113 °C	ASTM D3418
Rotational Molded Properties <sup>(1), (3)</sup>	English	SI	Method
<b>Impact Strength</b> , 1/8" (3.2 mm) thickness, -40 °C	68 ft-lb	92 J	ARM Impact
<b>Impact Strength</b> , 1/4" (6.35 mm) thickness, -40 °C	180 ft-lb	244 J	ARM Impact
<b>Tensile Strength at Yield</b> , 2 in/min, Type IV bar	3,000 psi	21 MPa	ASTM D638
<b>Elongation at Break</b> , 2 in/min, Type IV bar	720 %	720 %	ASTM D638
<b>Flexural Modulus</b> , Tangent - 16:1 span:depth, 0.5 in/min	125,000 psi	860 MPa	ASTM D790
<b>Flexural Modulus</b> , 1 % Secant - 16:1 span:depth, 0.5 in/min	105,000 psi	720 MPa	ASTM D790
<b>Heat Deflection Temperature</b> , 66 psi, Method A	147 °F	64 °C	ASTM D648
<b>Heat Deflection Temperature</b> , 264 psi, Method A	111 °F	44 °C	ASTM D648

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.
2. The physical properties were determined on compression-molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.
3. Properties were measured on rotational molded samples with 1/8" (3.17 mm) average thickness, unless otherwise noted. The average peak internal air temperature during molding was above 400 °F.

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