Marlex® Polyethylene

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex® HMN TR-935 / HMN TR-935G Polyethylene

MEDIUM DENSITY POLYETHYLENE (MDPE)

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

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

This resin is available in two physical forms:

- Pellet form - HMN TR-935
- 35 US mesh powder - HMN TR-935G

Typical applications for HMN TR-935 and HMN TR-935G include:

- Recreational and agricultural equipment
- Toys and carts

This resin meets these specifications:

- ASTM D4976 - PE 223
- 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).
- NSF / ANSI Standard 61 for potable water (CLD 23)
- NSF / ANSI Standard 51 for any food contact (MTU 100 °C)
- UL94HB yellow card per UL file E349283
- UL746C (f1) yellow card per UL file E349283
- FMVSS.302 burn test
- AS/NZS 4020:2005 (contact with drinking water)
- Long term UV stabilization – ASTM 2565 (Cycle 1): greater than **UV-20**

Nominal Physical Properties[1], [2]	English	SI	Method
Density	---	0.936 g/cm^3	ASTM D1505
Melt Index, 190 °C/2.16 kg	---	6.0 g/10 min	ASTM D1238
ESCR, Condition A (100 % Igepal), F_{50}	> 1,000 h	> 1,000 h	ASTM D1693
ESCR, Condition A (10 % Igepal), F_{50}	130 h	130 h	ASTM D1693
Durometer Hardness, Type D (Shore D)	59	59	ASTM D2240
Vicat Softening Temperature, Loading 1, Rate A	231 °F	110 °C	ASTM D1525
Brittleness Temperature, Type A, Type I specimen	-103 °F	-75 °C	ASTM D746
Melting Temperature	263 °F	128 °C	ASTM D3418
Crystallization Temperature	234 °F	112 °C	ASTM D3418
Rotational Molded Properties[1], [3]	**English**	**SI**	**Method**
Impact Strength, 1/8" (3.2 mm) thickness, -40 °C	75 ft·lb	102 J	ARM Impact
Impact Strength, 1/4" (6.35 mm) thickness, -40 °C	175 ft·lb	237 J	ARM Impact
Tensile Strength at Yield, 2 in/min, Type IV bar	2,400 psi	16.5 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	750 %	750 %	ASTM D638
Flexural Modulus, Tangent - 16:1 span:depth, 0.5 in/min	110,000 psi	760 MPa	ASTM D790
Flexural Modulus, 1 % Secant - 16:1 span:depth, 0.5 in/min	90,000 psi	620 MPa	ASTM D790
Heat Deflection Temperature, 66 psi, Method A	136 °F	58 °C	ASTM D648
Heat Deflection Temperature, 264 psi, Method A	106 °F	41 °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.

Chevron Phillips CHEMICAL