

Technical Data

Product Description

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-16

General

Material Status	• Commercial: Active
Literature ¹	• Technical Datasheet (English)
UL Yellow Card ²	• E349283-100986349
Search for UL Yellow Card	• Chevron Phillips Chemical Company LLC • Marlex®
Availability	• Latin America • North America
Additive	• UV Stabilizer
Features	• Copolymer • Durable • Food Contact Acceptable • Good Flow • Hexene Comonomer • High ESCR (Stress Crack Resist.) • High Impact Resistance • Medium Density • UV Stabilized
Uses	• Agricultural Applications • Sporting Goods • Toys
Agency Ratings	• AS/NZS 4020:2005 • ASTM D4976-PE223 • FDA 21 CFR 176.170(c), Table 1 • FDA 21 CFR 177.1520(c) 3.2a • FDA 21 CFR 176.170(c), Table 2 ³ • NSF STD-61 • NSF STD-51
UL File Number	• E349283
Forms	• Pellets
Processing Method	• Rotational Molding



Physical	Nominal Value Unit	Test Method
Density	0.936 g/cm ³	ASTM D1505
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	6.0 g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (ESCR)		ASTM D1693A
10% Igepal, F50	130 hr	
100% Igepal, F50	> 1000 hr	
Outdoor Suitability	f1	UL 746C
Mechanical	Nominal Value Unit	Test Method
Tensile Strength ⁵ (Yield, Rotational Molded)	16.5 MPa	ASTM D638
Tensile Elongation ⁵		ASTM D638
Break, Rotational Molded	750 %	
Flexural Modulus ⁶		ASTM D790
1% Secant : Rotational Molded, 16.0 mm Span	620 MPa	
Tangent : Rotational Molded, 16.0 mm Span	760 MPa	
Impact	Nominal Value Unit	
ARM Impact - Rotational Molded		
-40°C, 3.20 mm	102 J	
-40°C, 6.35 mm	237 J	
Hardness	Nominal Value Unit	Test Method
Durometer Hardness (Shore D)	59	ASTM D2240
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		ASTM D648A
0.45 MPa, Unannealed, Rotational Molded	58.0 °C	
1.8 MPa, Unannealed, Rotational Molded	41.0 °C	
Brittleness Temperature ⁷	-75.0 °C	ASTM D746A
Vicat Softening Temperature	110 °C	ASTM D1525 ⁸
Peak Melting Temperature	128 °C	ASTM D3418
Peak Crystallization Temperature (DSC)	112 °C	ASTM D3418
Flammability	Nominal Value Unit	Test Method
Flame Rating	HB	UL 94

Notes

- ¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- ² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.
- ³ use conditions B through H
- ⁴ Typical properties: these are not to be construed as specifications.
- ⁵ Type IV, 51 mm/min
- ⁶ 13 mm/min
- ⁷ Type I specimen
- ⁸ Rate A (50°C/h), Loading 1 (10 N)

