

# Marlex® HMN TR-938G

Medium Density Polyethylene  
Chevron Phillips Chemical Company LLC

Message:

These hexene copolymers are tailored for rotational molding applications that require:

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

Typical applications for HMN TR-938 and HMN TR-938G include items such as:

- Industrial waste containers and tanks
- Marine equipment
- Industrial tanks

These resins are available in:

- Pellet form - HMN TR-938
- 35 US mesh powder - HMN TR-938G

These resins meet 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. 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.
- 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)
- NSF / ANSI Standard 61 for potable water (CLD 23)
- AS/NZS 4766 (polyethylene water and chemical tanks)
- Long term UV stabilization - ASTM 2565 (Cycle 1): Greater than UV-16

| General Information |                                        |
|---------------------|----------------------------------------|
| Additive            | UV stabilizer                          |
| Features            | High ESCR (Stress Cracking Resistance) |
|                     | hexene comonomer                       |
|                     | Impact resistance, good                |
|                     | Good UV resistance                     |
|                     | Good liquidity                         |
| Uses                | Ship application                       |
|                     | Industrial container                   |
|                     | Water tank                             |
| Agency Ratings      | AS/NZS 4020:2005                       |
|                     | AS/NZS 4766                            |
|                     | ASTM D 2565                            |
|                     | ASTM D 4976-PE223                      |
|                     | FDA 21 CFR 177.1520(c) 3.2a 2          |
| UL File Number      | E54700                                 |

|                                                                     |                          |                   |                         |
|---------------------------------------------------------------------|--------------------------|-------------------|-------------------------|
| Forms                                                               | Powder                   |                   |                         |
| Processing Method                                                   | rotomolding              |                   |                         |
| Physical                                                            | Nominal Value            | Unit              | Test Method             |
| Density                                                             | 0.939                    | g/cm <sup>3</sup> | ASTM D1505              |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)                           | 3.0                      | g/10 min          | ASTM D1238              |
| Environmental Stress-Cracking Resistance                            |                          |                   | ASTM D1693A             |
| 10% Igepal, molded, F50                                             | 200                      | hr                | ASTM D1693A             |
| 100% Igepal, molded, F50                                            | > 1000                   | hr                | ASTM D1693A             |
| Outdoor Suitability                                                 | f1                       |                   | UL 746C                 |
| Hardness                                                            | Nominal Value            | Unit              | Test Method             |
| Durometer Hardness (Shore D, Compression Molded)                    | 60                       |                   | ASTM D2240              |
| Mechanical                                                          | Nominal Value            | Unit              | Test Method             |
| Tensile Strength <sup>1</sup> (Yield, 3.17 mm, Rotational Molded)   | 17.0                     | MPa               | ASTM D638               |
| Tensile Elongation <sup>2</sup> (Break, 3.17 mm, Rotational Molded) | 700                      | %                 | ASTM D638               |
| Flexural Modulus <sup>3</sup>                                       |                          |                   | ASTM D790               |
| 2% positive cut: mm, rotational molding                             | 660                      | MPa               | ASTM D790               |
| Tangent: mm, rotational molding                                     | 820                      | MPa               | ASTM D790               |
| Impact                                                              | Nominal Value            | Unit              | Test Method             |
| ARM Impact                                                          |                          |                   |                         |
| -40°C, 3.20 mm                                                      | 95.0                     | J                 |                         |
| -40°C, 6.35 mm                                                      | 237                      | J                 |                         |
| Thermal                                                             | Nominal Value            | Unit              | Test Method             |
| Deflection Temperature Under Load                                   |                          |                   | ASTM D648               |
| 0.45 MPa, unannealed, 3.17mm, rotational molding                    | 62.0                     | °C                | ASTM D648               |
| 1.8 MPa, unannealed, 3.17mm, rotational molding                     | 42.0                     | °C                | ASTM D648               |
| Brittleness Temperature                                             | -75.0                    | °C                | ASTM D746A              |
| Vicat Softening Temperature                                         | 117                      | °C                | ASTM D1525 <sup>4</sup> |
| Peak Melting Temperature                                            | 128                      | °C                | ASTM D3418              |
| Peak Crystallization Temperature (DSC)                              | 113                      | °C                | ASTM D3418              |
| Flammability                                                        | Nominal Value            |                   | Test Method             |
| Flame Rating                                                        | HB                       |                   | UL 94                   |
| NOTE                                                                |                          |                   |                         |
| 1.                                                                  | Type 4, 51mm/min         |                   |                         |
| 2.                                                                  | Type 4, 51mm/min         |                   |                         |
| 3.                                                                  | 13 mm/min                |                   |                         |
| 4.                                                                  | 速率 A (50°C/h), 压力1 (10N) |                   |                         |

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