

Marlex® 9005 High Density Polyethylene Chevron Phillips Chemical Company LLC



| eneral | | | |
|-------------------|--|---|---|
| Material Status | Commercial: Active | | |
| Availability | Asia PacificEurope | North AmericaSouth America | |
| Features | DurableFood Contact AcceptableGood Impact Resistance | Hexene ComonomerHigh ESCR (Stress Crack Resist.)Low Warpage | Medium FlowRecyclable Material |
| Uses | Agricultural ApplicationsContainers | Food ContainersIndustrial Applications | • Seats |
| Agency Ratings | ASTM D 4976-PE233 | FDA 21 CFR 177.1520(c) 3.2 | 2a |
| Forms | Pellets | | |
| Processing Method | Extrusion | Injection Molding | |

| hysical | Nominal Value (English) | Nominal Value (SI) | Test Method |
|---|-------------------------|--------------------|--------------|
| Density | 0.945 g/cm ³ | 0.945 g/cm³ | ASTM D1505 |
| Melt Mass-Flow Rate (MFR) (190°C/2.16 kg) | 6.0 g/10 min | 6.0 g/10 min | ASTM D1238 |
| Environmental Stress-Cracking Resistance | | | ASTM D1693B |
| 100% Igepal, Compression Molded, F50 | 90.0 hr | 90.0 hr | |
| lechanical | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Tensile Strength ² (Yield, Compression Molded) | 3340 psi | 23.0 MPa | ASTM D638 |
| Tensile Elongation ² | | | ASTM D638 |
| Break, Compression Molded | 1000 % | 1000 % | |
| Flexural Modulus - Tangent ³ (Compression Molded) | 155000 psi | 1070 MPa | ASTM D790 |
| ardness | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Durometer Hardness | 4.9 | | ASTM D2240 |
| Shore D, Compression Molded | 62 | 62 | |
| hermal | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Brittleness Temperature | < -103 °F | < -75.0 °C | ASTM D746A |
| Vicat Softening Temperature | 250 °F | 121 °C | ASTM D1525 4 |
| lammability | Nominal Value (English) | Nominal Value (SI) | Test Method |
| Flame Rating - UL | НВ | НВ | UL 94 |
| UL File Number | E54700 | E54700 | |

Notes

¹ Typical properties: these are not to be construed as specifications.

² Type IV, 2.0 in/min (51 mm/min)

³ 0.50 in/min (13 mm/min)

⁴ Rate A (50°C/h), Loading 1 (10 N)

Petrothene[®]

NA 952

Low Density Polyethylene Film Extrusion Grade Melt Index 2.0 Density 0.919

Applications

PETROTHENE NA 952 is a series of homopolymer resins especially designed for industrial and consumer packaging, and liner and bag applications. NA 952 has an excellent balance of processability, toughness and drawdown.

Regulatory Status

The NA 952 basic resin meets the requirements of the Food and Drug Administration regulation, 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food." Specific limitations or conditions of use may apply. Contact your Equistar sales representative for further information regarding the suitability of specific products for specific applications.

Processing Techniques

Specific recommendations for processing NA 952 can only be made when the processing conditions, equipment and end use are known. For further suggestions, please contact your Equistar sales representative.

Typical Properties*

| | 2 | | | | ASTM Test |
|--|---------------------------|-------------|-----------------|------------|---------------|
| | Property | | Value | Units | Method |
| | Melt Index | | 2.0 | g/10 min | D 1238 |
| | Base Resin Density | | 0.919 | g/cc | D 1505 |
| Vicat Softening Point | | | 85 | °C | D 1525 |
| | Film ¹ | | | | |
| Dart Drop Impact Strength, F ₅₀ | | 110 | g | D 1709 | |
| | Tensile Strength, MD (TD) | | 3,200 (2,300) | psi | D 882 |
| | Elongation, MD (TD) | | 200 (500) | % | D 882 |
| 1% Secant Modulus, MD (TD) | | | 26,500 (32,000) | psi | E 111 |
| Elmendorf Tear Strength, MD (TD) | | | 350 (70) | g | D 1922 |
| | Molding** | | | | |
| | Tensile Strength | | 1,800 | psi | D 638 |
| | Elongation @ Break | | 650 | % | D 638 |
| | Products 1 | NA 952 -000 | NA 952-094 | NA 952-126 | NA 952-083X01 |
| | Slip (ppm) | 0 | 500 | 500 | 0 |
| | Antiblock (ppm) | 0 | 4,500 | 10,000 | 4,000 |
| | | | | | |

- * These are typical values and not to be construed as specific product limits.
- ** Data derived from type IV specimen, 75 mil plaque @ 20" min.
- Data obtained from film produced in a 3½" (89 mm) blown film line, commercially available 8" (203 mm) die, 350°F (177°C) melt extrusion temperature, 2:1 BUR, 1.25 mil (32 micron) gauge, 0.025 die gap at 150 lb/hr.

The information on this document is, to our knowledge, true and accurate. However, since the particular uses and the actual conditions of use of our products are beyond our control, establishing satisfactory performance of our products for the intended application is the customer's sole responsibility. All uses of Equistar products and any written or oral information, suggestions or technical advice from Equistar are without warranty, express or implied, and are not an inducement to use any process or product in conflict with any patent.

Equistar materials are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Equistar makes no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues or fluids.

More detailed safety and disposal information on our products is contained in the Material Safety Data Sheet (MSDS). All users of our products are urged to retain and use the MSDS. A MSDS is automatically distributed upon purchase/order execution. You may request an advance or replacement copy by calling our MSDS Hotline at (800) 700-0946.

® Equistar and Petrothene are registered trademarks of Equistar Chemicals, LP.

Lyondell Chemical Company 1221 McKinney, Suite 700 P.O. Box 2583 Houston, Texas 77252-2583 (800) 615-899 http://www.equistarchem.com 9787/1104

