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Marlex® Polyethylene

PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex® TRB-432 Polyethylene

HIGH DENSITY POLYETHYLENE (HDPE)

This high performance PE 4710/PE 100 rated bimodal HDPE, ethylene-hexene copolymer is tailored for the demanding requirements of pressure pipe applications that require:

- Excellent long-term hoop strength
- Superb resistance to slow crack growth
- Exceptional resistance to rapid crack propagation
- Outstanding low-temperature toughness

Typical applications for TRB-432 include:

- Energy piping systems
- Potable water pipe
- Municipal pipe
- Industrial pipe
- Geothermal pipe

When blended with an approved black concentrate, the material meets or exceeds these standards/classifications:

- ASTM D3350, Cell Class PE445574C-CC3
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- ASTM D3350-14 Chlorinated Water Classification CC3
- NSF Standards 14 and 61 for potable water
- PPI designations PE 4710 HDPE and PE 100 HDPE(3)
- ASTM D4976 – PE 235
- NSF 3rd party D2513 certified
- NSF CSA B137.1 and B137.4 certified
- NSF 358-1 certified

Nominal Physical Properties(1)	English	SI	Method
Density	---	0.949 g/cm^3	ASTM D1505
Flow Rate (HLMI, 190 °C/21.6 kg)	---	8.0 g/10 min	ASTM D1238
Flexural Modulus, 2 % Secant - 16:1 span:depth, 0.5 in/min	140,000 psi	965 MPa	ASTM D790
Tensile Strength at Yield, 2 in/min, Type IV bar	3,700 psi	25.5 MPa	ASTM D638
Tensile Elongation at Break, 2 in/min, Type IV bar	> 700 %	> 700 %	ASTM D638
PENT Slow Crack Growth	> 10,000 h	> 10,000 h	ASTM F1473
Nominal Pipe Properties(2)	**English**	**SI**	**Method**
Hydrostatic Design Basis, 73 °F (23 °C)	1,600 psi	11.0 MPa	ASTM D2837
Hydrostatic Design Basis, 140 °F (60 °C)	1,000 psi	6.9 MPa	ASTM D2837
Minimum Required Strength(3)	1,450 psi	10.0 MPa	ISO 9080
Rapid Crack Propagation Data:			
Full Scale Critical Pressure, ***P_cFS***, 0 °C (32 °F)(4)	> 667 psi	> 46 bar	ISO 13478
Critical Pressure, ***P_cS4***, 0 °C (32 °F)(4)	>174 psi	> 12 bar	ISO 13477
Critical Temperature, ***T_c***, 5 bar (73 psi)(5)	< 2 °F	< -17 °C	ISO 13477
Notched Pipe Test, 4.6 MPa (667 psi), 80 °C (176 °F)	> 500 h	> 500 h	ISO 13479

1. The nominal properties reported herein are typical of the product when blended with an approved color concentrate, except the density value which is representative of the natural resin, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression-molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1 or ASTM F1473.
2. The nominal pipe properties were determined on pipe extruded from a pellet blend of TRB-432 and an approved carbon black concentrate.
3. Both the natural and the black versions of TRB-432 have a minimum required strength of 1,450 psi or 10.0 MPa.
4. Data is based on S4 tests conducted on 12-inch SDR 11 pipe. Full Scale Critical Pressure is a calculated value, based on standard ISO equation.
5. Critical Temperature was determined from S4 test conducted on 2-inch SDR 11 pipe.

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Before using this product, the user is advised and cautioned to make its own determination and assessment of the safety and suitability of the product for the specific use in question and is further advised against relying on the information contained herein as it may relate to any specific use or application. It is the ultimate responsibility of the user to ensure that the product is suited and the information is applicable to the user's specific application. Chevron Phillips Chemical Company LP does not make, and expressly disclaims, all warranties, including warranties of merchantability or fitness for a particular purpose, regardless of whether oral or written, express or implied, or allegedly arising from any usage of any trade or from any course of dealing in connection with the use of the information contained herein or the product itself. The user expressly assumes all risk and liability, whether based in contract, tort or otherwise, in connection with the use of the information contained herein or the product itself. Further, information contained herein is given without reference to any intellectual property issues, as well as federal, state or local laws which may be encountered in the use thereof. Such questions should be investigated by the user.