



CONTINUUM™ DGDA-2490 NT

Bimodal Polyethylene Resin

Overview

Industrial Standards Compliance:

- ASTM D 3350: cell classification
- Natural - PE445576A (MRS)
 - Black - PE445576C (MRS) (See NOTES 1)
 - Natural - PE445574A (HDB)
 - Black - PE445574C (HDB) (See NOTES 1)

Plastics Pipe Institute (PPI): TR-4

- Natural Pipe - CONTINUUM™ DGDA-2490 NT
 - ASTM PE4710 pipe grade - 1600psi HDB and 1000psi HDS @ 73°F (E-4)
- Black Pipe - CONTINUUM DGDA-2490 BK (See NOTES 2)
 - ISO PE100 pipe grade - MRS 10 @ 20°C; CRS 10 @ 20°C, 100 yr; CRS 8 @ 40°C, 90 yr; MRS 6.3 @ 60°C, 11 yr; CRS 11.2 @ 14°C, 50 yr
 - ASTM PE4710 pipe grade - 1600psi HDB and 1000psi HDS @ 73°F, and 1000psi HDB @ 140°F

National Sanitation Foundation (NSF): Standard 14 and 61

- Natural Pipe - DGDA-2490 NT
- Black Pipe - DGDA-2490 Black (See NOTES 2)

U.S. FDA 21 CFR 177.1520(c)3.2a

Consult the regulations for complete details

CONTINUUM™ DGDA-2490 NT Bimodal Polyethylene Resin is produced using UNIPOL™ II process technology. This product may be utilized for pipe applications where long-term hydrostatic strength combined with outstanding resistance to slow crack growth and rapid crack propagation is desired. Suitable applications include natural gas distribution pipes, industrial piping, mining, sewage, and municipal water service lines.

NOTES:

- (1) The first five numbers of the cell classification are based on natural resin. The last number and letter are based on black resin (natural resin plus 6.5% DFNF-0092).
- (2) Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density			
--	0.949 g/cm ³	0.949 g/cm ³	ASTM D792 ¹
--	0.959 g/cm ³	0.959 g/cm ³	ASTM D792 ²
Melt Index			ASTM D1238
190°C/2.16 kg	0.080 g/10 min	0.080 g/10 min	
190°C/21.6 kg	7.0 g/10 min	7.0 g/10 min	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength (Yield)	3600 psi	24.8 MPa	ASTM D638 ³
Tensile Elongation (Break)	740 %	740 %	ASTM D638 ³
Flexural Modulus	150000 psi	1030 MPa	ASTM D790B ^{4, 3}
Creep Rupture Strength			ISO 1167
68°F (20°C), 1798 psi (12.4 MPa)	> 1 wk	> 1 wk	
Hydrostatic Strength			ASTM D1598
68°F (20°C), 1798 psi (12.4 MPa)	> 1 wk	> 1 wk	
176°F (80°C), 798 psi (5.5 MPa)	> 6 wk	> 6 wk	
Resistance to Rapid Crack Propagation, Full Scale Pc			ISO 13478 ⁵
32°F (0°C)	> 665 psi	> 4.59 MPa	
Resistance to Rapid Crack Propagation, S-4 Pc			ISO 13477 ⁶
32°F (0°C)	> 174 psi	> 1.20 MPa	
Resistance to Rapid Crack Propagation, S-4 Tc			ISO 13477 ⁷
--	< 2 °F	< -17 °C	
Slow Crack Growth PENT	> 60 wk	> 60 wk	ASTM F1473 ³
Stress Crack Resistance - Pipe notch			ISO 13479
176°F (80°C), 133 psi (0.92 MPa)	> 3 wk	> 3 wk	

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	9.10 ft-lb/in	486 J/m	ASTM D256A ³
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Brittleness Temperature	< -103 °F	< -75.0 °C	ASTM D746A ³
Thermal Stability	> 428 °F	> 220 °C	ASTM D3350
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	380 to 440 °F	193 to 227 °C	

Extrusion Notes

Fabrication Conditions:

- Screw Type: High quality HDPE (preferably barrier for complete melting)
- Melt Temperature Range: 380-440°F (193-225°C)

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ Natural resin

² Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%)

³ Compression molded parts prepared according to ASTM D 4703 Procedure C unless otherwise noted in the test method. Properties will vary with changes in molding conditions and aging time.

⁴ Method I (3 point load)

⁵ Calculated value, determined by the equation in ISO 4437 based on S-4 test data. Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

⁶ Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

⁷ @ 10 bar, Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

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