CONTINUUM™ DGDA-2490 NT

Bimodal Polyethylene Resin

The Dow Chemical Company

Message:

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.
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-6)
Black Pipe - CONTINUUM DGDA-2490 BK (See NOTES 1)
ISO PE100 pipe grade - MRS 10 @ 20°C; CRS 10 @ 20°C, 100 yr; CRS 8 @ 40°C, 90 yr; CRS 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
NSF International: Standard 14 and 61
Natural Pipe - DGDA-2490 NT
Black Pipe - DGDA-2490 Black (See NOTES 1)
U.S. FDA 21 CFR 177.1520(c)3.2a
Consult the regulations for complete details
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).

General Information	
Additive	Processing Aid
Agency Ratings	ASTM D 3350 PE445574A ASTM D 3350 PE445574C ASTM D 3350 PE445576A ASTM D 3350 PE445576C ASTM PE4710 FDA 21 CFR 177.1520(c) 3.2a ISO PE 100 NSF 14 NSF 61 PPI TR-4
Forms	Pellets
Processing Method	Profile Extrusion

Physical	Nominal Value	Unit	Test Method
Specific Gravity			ASTM D792
Natural	0.949	g/cm³	
Black [1]	0.959	g/cm³	

Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/2.16 kg	0.080	g/10 min	
190°C/21.6 kg	7.0	g/10 min	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength [2] (Yield)	> 24.1	MPa	ASTM D638
Tensile Elongation [3] (Break)	> 500	%	ASTM D638
Flexural Modulus	1030	MPa	ASTM D790B
Creep Rupture Strength - 1798 psi (12.4 MPa) (20°C)	> 200	hr	ISO 1167
Hydrostatic Strength			ISO 4427
1798 psi (12.4 MPa) : 20°C	> 200	hr	
725 psi (5.0 MPa) : 80°C	> 1000	hr	
Resistance to Rapid Crack Propagation, Pc			
Calculated, Full Scale : 0°C [4]	> 46.0	bar	ISO 13478
S-4 : 0°C [5]	> 12.0	bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc - S-4 @ 10 bar [6]	< -17	°C	ISO 13477
Slow Crack Growth PENT [7]	> 10000	hr	ASTM F1473
Stress Crack Resistance - Pipe notch (80°C) [8]	> 1000	hr	ISO 13479
Thermal Stability	> 220	°C	ASTM D3350
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact [9] (23°C)	490	J/m	ASTM D256A
Thermal	**Nominal Value**	**Unit**	**Test Method**
Brittleness Temperature [10]	< -75.0	°C	ASTM D746A

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

5.	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.	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.
8.	133 psi (0.92 MPa)
9.	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.
10.	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.

Recommended distributors for this material

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