Technical Information

CONTINUUM™ DGDA-2493 BK
Bimodal Polyethylene Resin

Overview

CONTINUUM™ DGDA-2493 BK 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
  - Black - PE445574C CC3 (HDB) (See NOTES A)
- Plastics Pipe Institute (PPI): TR-4
  - Black Pipe - CONTINUUM™ DGDA-2490 BK (See NOTES A)
  - ASTM PE4710 pipe grade - 1600psi HDB and 1000psi HDS @ 73°F, and 1000psi HDB @ 140°F
- NSF International: Standard 14 and 61
  - Black Pipe - DGDA-2490 Black 100 (See NOTES A)

Consult the regulations for complete details.

NOTES:
(A) Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

Additive

- Antiblock: No
- Slip: No
- Processing Aid: Yes

Physical	Nominal Value (English)		Nominal Value (SI)		Test Method
Density					ASTM D792
Natural	0.950	g/cm³	0.950	g/cm³	
Black [1]	0.960	g/cm³	0.960	g/cm³	
Melt Index					ASTM D1238
190°C/2.16 kg	0.081	g/10 min	0.081	g/10 min	
190°C/21.6 kg	7.5	g/10 min	7.5	g/10 min	
Mechanical	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Tensile Strength [2] (Yield)	> 3500	psi	> 24.1	MPa	ASTM D638
Tensile Elongation [2] (Break)	> 500	%	> 500	%	ASTM D638
Flexural Modulus [3, 2]	150000	psi	1030	MPa	ASTM D790B
Creep Rupture Strength - 1798 psi (12.4 MPa) (68°F (20°C))	> 200	hr	> 200	hr	ISO 1167
Hydrostatic Strength [1]					ISO 4427
1798 psi (12.4 MPa) : 68°F (20°C)	> 200	hr	> 200	hr	
725 psi (5.0 MPa) : 176°F (80°C)	> 1000	hr	> 1000	hr	
Resistance to Rapid Crack Propagation, Pc					
Full Scale : 32°F (0°C) [4]	> 663	psi	> 45.7	bar	ISO 13478
S-4 : 32°F (0°C) [5]	> 174	psi	> 12.0	bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc - S-4 [5]					ISO 13477
32°F (0°C)	< 2	°F	< -17	°C	
Slow Crack Growth PENT [2]	10000	hr	10000	hr	ASTM F1473
Impact	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Notched Izod Impact [2] (73°F (23°C))	9.1	ft·lb/in	490	J/m	ASTM D256A
Thermal	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Brittleness Temperature [2]	< -103	°F	< -75.0	°C	ASTM D746A
Thermal Stability	> 428	°F	> 220	°C	ASTM D3350

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 extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

[2] Pipe extruded using natural resins and carbon black masterbatch DFBF-0092 (6.5 wt. %) under proper conditions then compressed into molded parts prepared from pipe according to ASTM D 4703 Procedure C. Properties will vary with changes in molding conditions and aging time. Data generated based on ASTM F1473 at Dow facility. Pent data projected based on representative test samples and conditions.

[3] Method I (3 point load)

[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.