



CONTINUUM™ DGDA-2490 BK

The Dow Chemical Company - Bimodal Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

CONTINUUM™ DGDA-2490 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 - PE445576C CC2 (MRS)(See NOTES A)
 - Black - PE445574C CC2 (HDB) (See NOTES A)
- Plastics Pipe Institute (PPI): TR-4
 - Black Pipe - CONTINUUM™ DGDA-2490 BK (See NOTES A)
 - ISO PE100 pipe grade - CRS 10 @ 20°C; MRS 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
 - 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%).

General

Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Latin America	• North America
Additive	• Antiblock: No	• Processing Aid: Yes	• Slip: No
Agency Ratings	• ASTM D3350 PE445574C • ASTM D3350 PE445576C • ASTM PE4710	• ISO PE 100 • NSF STD-14 • NSF STD-61	• PPI TR-4
Forms	• Pellets		
Processing Method	• Profile Extrusion		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity			ASTM D792
Natural	0.951		
Black ²	0.961		
Melt Mass-Flow Rate			ASTM D1238
190°C/2.16 kg	0.080	g/10 min	
190°C/21.6 kg	7.5	g/10 min	
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ³ (Yield)	> 3500	psi	ASTM D638
Tensile Elongation ³ (Break)	> 500	%	ASTM D638
Flexural Modulus ^{4, 3}	150000	psi	ASTM D790B
Creep Rupture Strength - 1798 psi (12.4 MPa) (68°F)	> 200	hr	ISO 1167
Hydrostatic Strength ²			ISO 4427
1798 psi (12.4 MPa) : 68°F	> 200	hr	
725 psi (5.0 MPa) : 176°F	> 1000	hr	

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Mechanical	Nominal Value	Unit	Test Method
Resistance to Rapid Crack Propagation, Pc			
Full Scale : 32°F ⁵	> 663	psi	ISO 13478
S-4 : 32°F ⁶	> 174	psi	ISO 13477
Resistance to Rapid Crack Propagation, Tc - S-4 ⁶ (32°F)	< 2	°F	ISO 13477
Slow Crack Growth PENT ³	10000	hr	ASTM F1473
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact ³ (73°F)	9.1	ft-lb/in	ASTM D256A
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature ³	< -103	°F	ASTM D746A
Thermal Stability	> 428	°F	ASTM D3350

Notes

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

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

³ 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.

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.