

CONTINUUM™ DGDA-2490 BK

Bimodal Polyethylene Resin
The Dow Chemical Company

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Technical Data

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 (MRS)(See NOTES 1)
 - Black - PE445574C (HDB) (See NOTES 1)
- Plastics Pipe Institute (PPI): TR-4
 - Black Pipe - CONTINUUM™ DGDA-2490 BK (See NOTES 1)
 - 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 1)

Consult the regulations for complete details.

NOTES:

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

General

Material Status	• Commercial: Active
Literature ¹	• Technical Datasheet
Search for UL Yellow Card	• The Dow Chemical Company
Availability	• Asia Pacific • Latin America • North America
Additive	• Processing Aid
Agency Ratings	• ASTM D 3350 PE445574C • ISO PE 100 • ASTM D 3350 PE445576C • NSF 14 • ASTM PE4710 • NSF 61 • PPI TR-4
Forms	• Pellets
Processing Method	• Profile Extrusion

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Specific Gravity			ASTM D792
Natural	0.951	0.949 g/cm ³	
Black ³	0.961	0.959 g/cm ³	
Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/2.16 kg	0.080 g/10 min	0.080 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 ⁴ (Yield)	> 3500 psi	> 24.1 MPa	ASTM D638
Tensile Elongation ⁴ (Break)	> 500 %	> 500 %	ASTM D638
Flexural Modulus ^{5, 4}	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 ³			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) ⁶	> 667 psi	> 46.0 bar	ISO 13478
S-4 : 32°F (0°C) ⁷	> 174 psi	> 12.0 bar	ISO 13477



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Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Resistance to Rapid Crack Propagation, Tc - S-4 ⁷			ISO 13477
32°F (0°C)	< 2 °F	< -17 °C	
Slow Crack Growth PENT ⁴	> 10000 hr	> 10000 hr	ASTM F1473
Stress Crack Resistance - Pipe notch ⁸ (176°F (80°C))	> 1000 hr	> 1000 hr	ISO 13479
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact ⁴ (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 ⁴	< -103 °F	< -75.0 °C	ASTM D746A
Thermal Stability	> 428 °F	> 220 °C	ASTM D3350

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² Typical properties: these are not to be construed as specifications.

³ Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

⁴ 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.

⁵ Method I (3 point load)

⁶ 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

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⁸ 133 psi (0.92 MPa)



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Where to Buy

Supplier

The Dow Chemical Company

Midland, MI USA

Telephone: 800-441-4369

Web: <http://plastics.dow.com/>

Distributor

Entec Polymers

Telephone: 800-375-5440

Web: <http://www.entecpolymers.com/>

Availability: North America

