

# CONTINUUM™ DGDB-2490 BK Bimodal Polyethylene Resin



## Overview

Industrial Standards Compliance:

- ASTM D 3350: cell classification
- Black - PE445576C
- Plastics Pipe Institute (PPI): TR-4
- Black Pipe - CONTINUUM DGDB-2490 BK 100 (See NOTES A)
- 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
- ASTM PE4710 pipe grade - 1600psi HDB @ 73°F and 1000psi HDB @ 140°F
- National Sanitation Foundation (NSF): Standard 14 and 61
- Black Pipe - DGDB-2490 (See NOTES A)
- Standard 14 and 61.
- Consult the regulations for complete details.

CONTINUUM™ DGDB-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.

### NOTES:

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

## Additive

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

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density			ASTM D792
-- 1	0.949 g/cm <sup>3</sup>	0.949 g/cm <sup>3</sup>	
-- 2	0.959 g/cm <sup>3</sup>	0.959 g/cm <sup>3</sup>	
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 <sup>3</sup> (Yield)	3600 psi	24.8 MPa	ASTM D638
Tensile Elongation <sup>3</sup> (Break)	740 %	740 %	ASTM D638
Flexural Modulus <sup>4,3</sup>	150000 psi	1030 MPa	ASTM D790B
Hydrostatic Strength <sup>2</sup>			ASTM D1598
1798 psi (12.4 MPa) : 68°F (20°C)	> 100 hr	> 100 hr	
798 psi (5.5 MPa) : 176°F (80°C)	> 1000 hr	> 1000 hr	
Resistance to Rapid Crack Propagation, Pc			
Calculated, Full Scale : 32°F (0°C) <sup>5</sup>	> 664 psi	> 45.8 bar	ISO 13478
S-4 : 32°F (0°C) <sup>6</sup>	> 174 psi	> 12.0 bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc <sup>7</sup>	< 2 °F	< -17 °C	ISO 13477
Slow Crack Growth PENT <sup>3</sup>	10000 hr	10000 hr	ASTM F1473
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact <sup>3</sup> (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 <sup>3</sup>	< -103 °F	< -75.0 °C	ASTM D746A
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	



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**Extrusion Notes**

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## 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.

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<sup>1</sup> Natural resin

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

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<sup>3</sup> Compression molded parts prepared according to ASTM D 14703 Procedure C unless otherwise noted in the test method. Properties will vary with changes in molding conditions and aging time.

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<sup>4</sup> Method I (3 point load)

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<sup>5</sup> 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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<sup>6</sup> Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

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<sup>7</sup> Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%). Pipe diameter of 10 inch IPS (25.4 cm) and Standard Diameter Ratio (SDR) 11.

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