Technical Data Sheet

CONTINUUM™ DGDC-2490 NT Bimodal Polyethylene Resin

Overview

CONTINUUM™ DGDC-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.

Sustainability Attribute:

Resoursa™
Advancing resource efficiency with DOW

Industrial Standards Compliance:

- ASTM D 3350: cell classification
  - Black Resin — PE445574C CC3 (See NOTES A)
- Plastics Pipe Institute (PPI): TR-4
  - Black Pipe — CONTINUUM™ DGDC-2490 BK (See NOTES A)
  - ASTM PE4710 pipe grade
    - 1600 psi HDB and 1000 psi HDS @ 73°F
    - 1000 psi HDB @ 140°F
    - NSF International
    - NSF/ANSI Standard 14
    - NSF/ANS/CAN Standard 61
  - Black Pipe — CONTINUUM™ DGDC-2490 BK (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

Properties (Cont.)

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method[1]
Density					ASTM D792
Black[2]	0.960	g/cm³	0.960	g/cm³	
Natural	0.950	g/cm³	0.950	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					
Tensile Strength[3] (Yield)	> 3500	psi	> 24.1	MPa	ASTM D638
Tensile Elongation[3] (Break)	> 500	%	> 500	%	ASTM D638
Flexural Modulus[3,4]	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[2]					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)[5]	> 663	psi	> 45.7	bar	ISO 13478
S-4: 32°F (0°C)[6]	> 174	psi	> 12.0	bar	ISO 13477
Resistance to Rapid Crack Propagation, Tc					ISO 13477
S-4 @ 10 bar[6]	< 2	°F	< -17	°C	
Slow Crack Growth PENT[3]	10000	hr	10000	hr	ASTM F1473
Impact					
Notched Izod Impact[3] (73°F (23°C))	9.1	ft-lb/in	490	J/m	ASTM D256A
Thermal					
Brittleness Temperature[3]	< -103	°F	< -75.0	°C	ASTM D746A
Thermal Stability	> 428	°F	> 220	°C	ASTM D3350

1. ASTM: American Society for Testing and Materials
   ISO: International Standardization Organization
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 DFNF-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.

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.