Technical Data Sheet

CONTINUUM™ DGDA-2492 NT Bimodal Polyethylene Resin

Overview

CONTINUUM™ DGDA-2492 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, rapid crack propagation, and high melt strength is desired. Suitable applications include natural gas distribution pipes, large diameter industrial piping, mining, sewage, and municipal water service lines.

Industrial Standards Compliance:

- ASTM D 3350: cell classification
  - Natural - PE445576A CC0(MRS)
  - Black - PE445576C CC2 (MRS) (See NOTES A)
  - Natural - PE445574A CC0(HDB)
  - Black - PE445574C CC2 (HDB) (See NOTES A)
- Plastics Pipe Institute (PPI): TR-4:
  - Black Pipe - CONTINUUM™ DGDA-2492 BK (See NOTES A)
    - ISO PE100 pipe grade - MRS 10 @ 20°C; CRS 6.3 @ 60°C, 11 yr
    - ASTM PE4710 pipe grade – 1600 psi HDB and 1000 psi HDS @ 73°F, and 1000 psi HDB @ 140°F
    - NSF International
    - NSF/ANSI Standard 14
    - NSF/ANS/CAN Standard 61
  - Black Pipe - DGDA-2492 Black (See NOTES B)

Consult the regulations for complete details.

NOTES:

A. The first five numbers of the cell classification are based on natural resin. The last number and letter are based on black resin (natural resin plus 6.5% DFNF-0092).
B. Natural resin extruded under proper conditions with carbon black masterbatch DFNF-0092 (6.5%).

Additive

- Antiblock: No
- Slip: No
- Processing aid: Yes

Properties

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method[1]
Density					ASTM D1505
Natural	0.949	g/cm^3	0.949	g/cm^3	
Black[2]	0.959	g/cm^3	0.959	g/cm^3	
Melt Index					ASTM D1238
190°C/2.16 kg	0.060	g/10 min	0.060	g/10 min	
190°C/21.6 kg	5.5	g/10 min	5.5	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					ISO 4427
1798 psi (12.4 MPa) : 68°F (20°C)	'> 100	hr	> 100	hr	
725 psi (5.0 MPa) : 176°F (80°C)	> 1000	hr	> 1000	hr	
Resistance to Rapid Crack Propagation, Pc					
Calculated, Full Scale : 32°F (0°C)[5]	> 667	psi	> 46.0	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 Tc (@ 12 bar)[6]	< 0	°F	< -18	°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 D746
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. 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.
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.

Product Stewardship

The Dow Chemical Company and its subsidiaries ("Dow") has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our Product Stewardship program rests with each and every individual involved with Dow products -from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Medical Applications Policy

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

a. long-term or permanent contact with internal bodily fluids or tissues. "Long-term" is contact which exceeds 72 continuous hours;
b. use in cardiac prosthetic devices regardless of the length of time involved ("cardiac prosthetic devices" include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass-assisted devices);
c. use as a critical component in medical devices that support or sustain human life; or
d. use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.**

Contact:
www.dow.com/contact