DOW™ MDPE DNDA-1796 NT 7

The Dow Chemical Company - Medium Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- High melt strength
- Excellent low temperature toughness
- Good environmental stress crack resistance
- Excellent flex life

Industrial Standards Compliance:

- ASTM D 3350: cell classification PE224340A
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a.
- Complies with Canadian HPFB No Objection (With Limitations)
- Consult the regulations for complete details.

DOW DNDA-1796 NT 7 Medium Density Polyethylene Resin is produced using UNIPOL™ process technology. It is intended for use in flexible hose and tube applications. It also has utility in certain sheet applications and blow molding applications such as small, squeezable bottles. It exhibits high melt strength, excellent low temperature toughness, good stress cracking resistance, and outstanding flex life. It has a high molecular weight and a relatively broad molecular weight distribution that provides an excellent balance of performance properties and processability.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• ASTM D3350 PE224340A	• FDA 21 CFR 177.1520(c) 3.1a	• HPFB (Canada) No Objection [1]
Forms	• Pellets		
Processing Method	• Blown Film	• Profile Extrusion	

ASTM & ISO Properties [2]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.941		ASTM D792
Melt Mass-Flow Rate			ASTM D1238
190°C/2.16 kg	0.60	g/10 min	
190°C/21.6 kg	40	g/10 min	
Environmental Stress-Cracking Resistance (ESCR)			
F0 [3]	> 2000	hr	ASTM D1693C
122°F, 100% Igepal, F50 [4]	> 1500	hr	ASTM D1693
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength			ASTM D638
Yield [3]	2750	psi	
Yield [4]	2900	psi	
Tensile Strength			ASTM D638
Break [3]	3000	psi	
Break [4]	3100	psi	
Tensile Elongation [4] (Yield)	4.0	%	ASTM D638
Tensile Elongation			ASTM D638
Break [3]	> 800	%	
Break [4]	700	%	

DOW™ MDPE DNDA-1796 NT 7

The Dow Chemical Company - Medium Density Polyethylene Resin

Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus			ASTM D790B
-- [5, 3]	95000	psi	
2% Secant [4]	87000	psi	
Impact	**Nominal Value**	**Unit**	**Test Method**
Tensile Impact Strength [6, 4]	110	ft·lb/in²	ASTM D1822
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness			ASTM D2240
Shore D [3]	56		
Shore D [4]	61		
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load [4] (66 psi, Unannealed)	131	°F	ASTM D648
Brittleness Temperature			
-- [3]	< -139	°F	ASTM D746A
-- [4]	< -105	°F	ASTM D746
Vicat Softening Temperature	248	°F	ASTM D1525
Melting Temperature (DSC)	259	°F	Internal Method
Peak Crystallization Temperature (DSC)	239	°F	Internal Method

Processing Information

Extrusion Notes

Fabrication Conditions for Hose and Tube:

- Screw Type: All standard commercial extrusion equipment.
- Melt Temperature Range: 400-440 °F (205-225 °C)

Notes

[1] With limitations

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

[3] Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time.

[4] Plaque molded and tested in accordance with ASTM D4976.

[5] Method I (3 point load)

[6] Type S