



# DOW™ MDPE DNDA-1796 NT 7 Medium Density Polyethylene Resin

## Overview

- 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.

## Additive

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

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.939 g/cm <sup>3</sup>	0.939 g/cm <sup>3</sup>	ASTM D792
Base Density <sup>1</sup>	0.939 g/cm <sup>3</sup>	0.939 g/cm <sup>3</sup>	Dow Method
Melt Index			ASTM D1238
190°C/2.16 kg	0.60 g/10 min	0.60 g/10 min	
190°C/21.6 kg	40 g/10 min	40 g/10 min	
Environmental Stress-Cracking Resistance (ESCR)			
F0 <sup>2</sup>	> 2000 hr	> 2000 hr	ASTM D1693C
122°F (50°C), 100% Igepal, F50 <sup>3</sup>	> 1500 hr	> 1500 hr	ASTM D1693
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield <sup>2</sup>	2750 psi	19.0 MPa	
Yield <sup>3</sup>	2900 psi	20.0 MPa	
Break <sup>2</sup>	3000 psi	20.7 MPa	
Break <sup>3</sup>	3100 psi	21.4 MPa	
Tensile Elongation			ASTM D638
Yield <sup>3</sup>	4.0 %	4.0 %	
Break <sup>2</sup>	> 800 %	> 800 %	
Break <sup>3</sup>	700 %	700 %	
Flexural Modulus			ASTM D790B
... 4.2	95000 psi	655 MPa	
2% Secant <sup>3</sup>	87000 psi	600 MPa	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Impact Strength <sup>5, 3</sup>	110 ft-lb/in <sup>2</sup>	231 kJ/m <sup>2</sup>	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness			ASTM D2240
Shore D <sup>2</sup>	56	56	
Shore D <sup>3</sup>	61	61	



Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load <sup>3</sup> 66 psi (0.45 MPa), Unannealed	131 °F	55.0 °C	ASTM D648
Brittleness Temperature			
-- <sup>2</sup>	< -139 °F	< -95.0 °C	ASTM D746A
-- <sup>3</sup>	< -105 °F	< -76.1 °C	ASTM D746
Vicat Softening Temperature	248 °F	120 °C	ASTM D1525
Melting Temperature (DSC)	259 °F	126 °C	Dow Method
Peak Crystallization Temperature (DSC)	239 °F	115 °C	Dow Method

#### 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

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

<sup>1</sup> Base density is estimated using the assumption that every 1000 ppm of antiblock in the finished product raises the density of the polymer by 0.0006 g/cm<sup>3</sup>. Base density is the estimated density of the polymer if it did not contain any antiblock.

<sup>2</sup> Compression molded parts prepared according to ASTM D 1928 Procedure C. Properties will vary with changes in molding conditions and aging time.

<sup>3</sup> Plaque molded and tested in accordance with ASTM D4976.

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

<sup>5</sup> Type S

