



DOW HDPE DMDA-8904 NT 7 High Density Polyethylene Resin

Overview

- Injection molding
- For injection molded pails, industrial parts and other shipping containers
- Excellent impact strength, stress crack resistance and processability
- Very narrow molecular weight distribution

Complies with:

- U.S. FDA 21 CFR 177.1520 (c)3.1a
- Canadian HPFB No Objection (With Limitations)
- Europe EU-Directive 2002/72/EC

Consult the regulations for complete details.

DOW DMDA-8904 NT 7 High Density Polyethylene (HDPE) Resin is produced via UNIPOL™ Process Technology from Dow and is intended for use in injection molding applications such as pails, industrial parts and other shipping containers. This resin has been designed to provide excellent processability for molders and to meet the rigorous performance characteristics of applications requiring stackability, environmental stress crack resistance and impact strength. This resin is also suitable for cast film extrusion processing.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	0.952 g/cm ³	0.952 g/cm ³	ASTM D792
Melt Index (190°C/2.16 kg)	4.4 g/10 min	4.4 g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance 122°F (50°C), 100% Igepal, F50	22.0 hr	22.0 hr	ASTM D1693 ¹
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638 ¹
Yield	3900 psi	26.9 MPa	
Break	4500 psi	31.0 MPa	
Tensile Elongation			ASTM D638 ¹
Yield	9.0 %	9.0 %	
Break	1200 %	1200 %	
Flexural Modulus - 2% Secant	160000 psi	1100 MPa	ASTM D790B ¹
Films	Nominal Value (English)	Nominal Value (SI)	Test Method
Film Thickness - Tested	1.00 mil	25.4 µm	
Film Puncture Resistance 1.00 mil (25.4 µm)	8.00 ft-lb/in ³	0.662 J/cm ³	Dow Method
Secant Modulus			ASTM D882
2% Secant, MD: 1.00 mil (25.4 µm), Cast Film	81300 psi	560 MPa	
2% Secant, TD: 1.00 mil (25.4 µm), Cast Film	91700 psi	632 MPa	
Tensile Strength			ASTM D882
MD: Yield, 1.00 mil (25.4 µm), Cast Film	3510 psi	24.2 MPa	
TD: Yield, 1.00 mil (25.4 µm), Cast Film	3010 psi	20.7 MPa	
MD: Break, 1.00 mil (25.4 µm), Cast Film	6630 psi	45.7 MPa	
TD: Break, 1.00 mil (25.4 µm), Cast Film	5640 psi	38.9 MPa	
Tensile Elongation			ASTM D882
MD: Break, 1.00 mil (25.4 µm), Cast Film	690 %	690 %	
TD: Break, 1.00 mil (25.4 µm), Cast Film	940 %	940 %	
Dart Drop Impact 1.00 mil (25.4 µm), Cast Film	28 g	28 g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922
MD: 1.00 mil (25.4 µm), Cast Film	22 g	22 g	
TD: 1.00 mil (25.4 µm), Cast Film	160 g	160 g	
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Impact Strength	40.0 ft-lb/in ²	84.1 kJ/m ²	ASTM D1822 ^{2, 1}

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Durometer Hardness (Shore D)	59	59	ASTM D2240 ¹
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ASTM D648 ¹
66 psi (0.45 MPa), Unannealed	162 °F	72.2 °C	
Brittleness Temperature	< -105 °F	< -76.1 °C	ASTM D746 ¹
Vicat Softening Temperature	264 °F	129 °C	ASTM D1525
Melting Temperature (DSC)	268 °F	131 °C	Dow Method
Peak Crystallization Temperature (DSC)	246 °F	119 °C	Dow Method
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°, 1.00 mil (25.4 µm), Cast Film)	87	87	ASTM D2457
Haze (1.00 mil (25.4 µm), Cast Film)	3.0 %	3.0 %	ASTM D1003
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	525 °F	274 °C	

Extrusion Notes

Fabrication Conditions For Cast Film:

- EGAN/Davis-Standard 5 layer cast line
- Melt Temperature: 525° F (261°C)
- Chill Roll (primary/secondary) Temperature: 70°F (21°C)
- Line Speed: 400 fpm (123 m/min)
- Output: 356 lb/hr
- Die width: 36 in. (914 mm)
- Die gap: 25 mil (.65 mm)
- Air gap: 3 in. (76 mm)

Notes

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

¹ Molded and tested in accordance with ASTM D4976.

² Type S

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Additional Information

North America		Europe/Middle East	+800-3694-6367
U.S. & Canada:	1-800-441-4369		+32-3-450-2240
	1-989-832-1426	Italy:	+800-783-825
Mexico:	+1-800-441-4369		
Latin America		South Africa	+800-99-5078
Argentina:	+54-11-4319-0100		
Brazil:	+55-11-5188-9000		
Colombia:	+57-1-219-6000	Asia Pacific	+800-7776-7776
Mexico:	+52-55-5201-4700		+603-7965-5392

www.dowplastics.com

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