DOW™ HDPE DMDA-8904 NT 7

The Dow Chemical Company - High Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- 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)3.2a
- Canadian HPFB No Objection
- EU, No 10/2011

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.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Latin America	• North America
Additive	• Antiblock: No	• Processing Aid: No	• Slip: No
Agency Ratings	• EU No 10/2011	• FDA 21 CFR 177.1520(c) 3.2a	• HPFB (Canada) No Objection
Forms	• Pellets		
Processing Method	• Cast Film	• Injection Molding	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.954		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	4.4	g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (ESCR) [2]			ASTM D1693
122°F, 100% Igepal, F50	22.0	hr	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength [2] (Yield)	3900	psi	ASTM D638
Tensile Strength [2] (Break)	4500	psi	ASTM D638
Tensile Elongation [2] (Yield)	9.0	%	ASTM D638
Tensile Elongation [2] (Break)	1200	%	ASTM D638
Flexural Modulus - 2% Secant [2]	160000	psi	ASTM D790B
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	1	mil	
Film Puncture Resistance (1.0 mil)	8.00	ft·lb/in³	Internal Method
Secant Modulus - 2% Secant, MD (1.0 mil, Cast Film)	81300	psi	ASTM D882
Secant Modulus - 2% Secant, TD (1.0 mil, Cast Film)	91700	psi	ASTM D882
Tensile Strength - MD (Yield, 1.0 mil, Cast Film)	3510	psi	ASTM D882
Tensile Strength - TD (Yield, 1.0 mil, Cast Film)	3010	psi	ASTM D882
Tensile Strength - MD (Break, 1.0 mil, Cast Film)	6630	psi	ASTM D882

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Films	Nominal Value	Unit	Test Method
Tensile Strength - TD (Break, 1.0 mil, Cast Film)	5640	psi	ASTM D882
Tensile Elongation - MD (Break, 1.0 mil, Cast Film)	690	%	ASTM D882
Tensile Elongation - TD (Break, 1.0 mil, Cast Film)	940	%	ASTM D882
Dart Drop Impact (1.0 mil, Cast Film)	28	g	ASTM D1709A
Elmendorf Tear Strength - MD (1.0 mil, Cast Film)	22	g	ASTM D1922
Elmendorf Tear Strength - TD (1.0 mil, Cast Film)	160	g	ASTM D1922
Impact	**Nominal Value**	**Unit**	**Test Method**
Tensile Impact Strength [3, 2]	40.0	ft·lb/in²	ASTM D1822
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness [2] (Shore D)	59		ASTM D2240
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load [2] (66 psi, Unannealed)	162	°F	ASTM D648
Brittleness Temperature [2]	< -105	°F	ASTM D746
Vicat Softening Temperature	264	°F	ASTM D1525
Melting Temperature (DSC)	268	°F	Internal Method
Peak Crystallization Temperature (DSC)	246	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (45°, 1.00 mil, Cast Film)	87		ASTM D2457
Haze (1.00 mil, Cast Film)	3.00	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	525	°F

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

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

[2] Molded and tested in accordance with ASTM D4976.

[3] Type S