DOW™ HDPE DMDA-8007 NT 7

The Dow Chemical Company - High Density Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- Excellent stiffness/modulus
- Excellent warp resistance
- Molded parts have high gloss, low odor
- For injection molded crates, cases, totes, and other parts needing high modulus
- Complies with U.S. FDA 21 CFR 177.1520 (c)2.2
- Complies with Canadian HPFB No Objection
- Complies with EU, No 10/2011
- Consult the regulations for complete details.

DOW DMDA-8007 NT 7 High Density Polyethylene (HDPE) Resin is a narrow molecular weight distribution high density homopolymer designed to offer excellent stiffness, low warpage, good/acceptable toughness, and good moldability. This resin is ideally suited for injection molded crates, cases, trays, tote bins, and other objects requiring high rigidity. 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) 2.2	• 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	0.967		ASTM D792
Melt Mass-Flow Rate			ASTM D1238
190°C/2.16 kg	8.3	g/10 min	
190°C/21.6 kg	180	g/10 min	
Environmental Stress-Cracking Resistance (ESCR) [2]			ASTM D1693
122°F, 100% Igepal, F50	2.00	hr	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength [2] (Yield)	4500	psi	ASTM D638
Tensile Strength [2] (Break)	2600	psi	ASTM D638
Tensile Elongation [2] (Yield)	6.0	%	ASTM D638
Tensile Elongation [2] (Break)	350	%	ASTM D638
Flexural Modulus - 2% Secant [2]	205000	psi	ASTM D790B
Films	**Nominal Value**	**Unit**	**Test Method**
Film Thickness - Tested	1	mil	
Film Puncture Resistance (1.0 mil)	7.00	ft·lb/in³	Internal Method
Secant Modulus - 2% Secant, MD (1.0 mil, Cast Film)	116000	psi	ASTM D882
Secant Modulus - 2% Secant, TD (1.0 mil, Cast Film)	136000	psi	ASTM D882
Tensile Strength - MD (Yield, 1.0 mil, Cast Film)	2950	psi	ASTM D882
Tensile Strength - TD (Yield, 1.0 mil, Cast Film)	3240	psi	ASTM D882
Tensile Elongation - MD (Break, 1.0 mil, Cast Film)	670	%	ASTM D882

DOW™ HDPE DMDA-8007 NT 7

The Dow Chemical Company - High Density Polyethylene Resin

Films	Nominal Value	Unit	Test Method
Tensile Elongation - TD (Break, 1.0 mil, Cast Film)	490	%	ASTM D882
Dart Drop Impact (1.0 mil, Cast Film)	24	g	ASTM D1709A
Elmendorf Tear Strength - MD (1.0 mil, Cast Film)	36	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]	80.0	ft·lb/in²	ASTM D1822
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness [2] (Shore D)	61		ASTM D2240
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load [2] (66 psi, Unannealed)	183	°F	ASTM D648
Brittleness Temperature [2]	< -105	°F	ASTM D746
Vicat Softening Temperature	268	°F	ASTM D1525
Melting Temperature (DSC)	271	°F	Internal Method
Peak Crystallization Temperature (DSC)	248	°F	Internal Method
Optical	**Nominal Value**	**Unit**	**Test Method**
Gloss (45°, 1.00 mil, Cast Film)	75		ASTM D2457
Haze (1.00 mil, Cast Film)	8.00	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	500	°F

Extrusion Notes

Fabrication Conditions For Cast Film:

- Screw A, Size: 2 in. (51 mm); 30:1 L/D
  - Screw Speed: 39 rpm
- Screw B, Size: 2.5 in. (63.5 mm); 30:1 L/D
  - Screw Speed: 39 rpm
- Screw C, Size: 2.5 in. (63.5 mm); 30:1 L/D
  - Screw Speed: 39 rpm
- Screw D, Size: 2.5 in. (63.5 mm); 30:1 L/D
  - Screw Speed: 39 rpm
- Screw E, Size: 2 in. (51 mm); 30:1 L/D
  - Screw Speed: 39 rpm
- Screw Type: DSB II
- Melt Temperature: 500°F (261°C)
- Chill Roll Temperature: 70°F (21°C)
- Line Speed: 400 fpm (123 m/min)
- Output: 426 lb/hr
- Die width: 36 in. (914 mm)
- Die gap: 25 mil (0.6 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