Technical Information

DOW™ HDPE DGDC-2100 NT 7
High Density Polyethylene Resin

Overview

- High Density Polyethylene (HDPE)
- 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 DGDC-2100 NT 7 High Density Polyethylene Resin is a high-molecular weight, high-density film grade resin. This product was specifically designed to offer an optimal balance of physical properties and processability. DGDC-2100 NT7 HDPE resin is ideally suited for use in making grocery sacks, consumer and institutional liners, and merchandise bags.

Additive

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

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.948	g/cm³	0.948	g/cm³	ASTM D792
Base Density [1]	0.948	g/cm³	0.948	g/cm³	Dow Method
Melt Index					ASTM D1238
190°C/2.16 kg	0.070	g/10 min	0.070	g/10 min	
190°C/21.6 kg	9.0	g/10 min	9.0	g/10 min	
Films	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Film Thickness - Tested	1	mil	13	µm	
Film Puncture Energy (0.50 mil (13 µm))	7.90	in·lb	0.893	J	Dow Method
Film Puncture Force (0.50 mil (13 µm))	6.70	lbf	29.8	N	Dow Method
Film Puncture Resistance (0.50 mil (13 µm))	128	ft·lb/in³	10.6	J/cm³	Dow Method
Secant Modulus					ASTM D882
2% Secant, MD : 0.50 mil (13 µm)	140000	psi	966	MPa	
2% Secant, TD : 0.50 mil (13 µm)	159000	psi	1100	MPa	
Tensile Strength					ASTM D882
MD : Yield, 0.50 mil (13 µm)	6140	psi	42.4	MPa	
TD : Yield, 0.50 mil (13 µm)	4610	psi	31.8	MPa	
MD : Break, 0.50 mil (13 µm)	13600	psi	93.4	MPa	
TD : Break, 0.50 mil (13 µm)	9990	psi	68.8	MPa	
Tensile Elongation					ASTM D882
MD : Break, 0.50 mil (13 µm)	330	%	330	%	
TD : Break, 0.50 mil (13 µm)	410	%	410	%	
Dart Drop Impact (0.50 mil (13 µm))	350	g	350	g	ASTM D1709A
Elmendorf Tear Strength					ASTM D1922
MD : 0.50 mil (13 µm)	11	g	11	g	
TD : 0.50 mil (13 µm)	73	g	73	g	
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Melting Temperature (DSC)	262	°F	128	°C	Dow Method
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Gloss (45°, 0.500 mil (12.7 µm))	9		9		ASTM D2457
Haze (0.500 mil (12.7 µm))	69.0	%	69.0	%	ASTM D1003

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Manufacturer website: https://www.dow.com/en-us/market/mkt-polyethylene.html

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 1.97 in. (50mm); 24:1 L/D
- Melt Temperature: 410 °F (210 °C)
- Output: 8 lb/hr/in. of die circumference
- Die Diameter: 3.94 in. (100mm)
- Blow-Up Ratio: 4:1
- Neck Height: 32 in. (813 mm)

Notes

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

[1] 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/cm³. Base density is the estimated density of the polymer if it did not contain any antiblock.

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