

## DOW<sup>™</sup> LLDPE DFDA-7047 NT 7 Linear Low Density Polyethylene Resin

Overview

DOW™ DFDA-7047 NT7 linear low density polyethylene is an ethylene-butene copolymer designed for blown film applications.

Main Characteristics:

- Butene linear low density polyethylene
- Blown film extrusion
- Pellet form

Complies with:

- EU, No 10/2011
- U.S. FDA, 21 CFR 177.1520(c)3.2a
- Canadian HPFB No Objection (with Limitations)
- JHOSPA (Japan Hygienic Olefin and Styrene Plastics Association)

Consult the regulations for complete details.

Additive • Antiblock: No	• Slip: N	Slip: No		Processing Aid: No		
Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method	
Density	0.918	g/cm³	0.918	g/cm³	ASTM D792	
Base Density <sup>1</sup>	0.918	g/cm³	0.918	g/cm³	Dow Method	
Melt Index (190°C/2.16 kg)	1.0	g/10 min	1.0	g/10 min	ASTM D1238	
Films	Nominal Value	(English)	Nominal Value	(SI)	Test Method	
Film Thickness - Tested	1	mil	25	μm		
Film Puncture Energy	22.0	in·lb	2.49	J	Dow Method	
Film Puncture Force	8.00	lbf	35.6	Ν	Dow Method	
Film Puncture Resistance	145	ft·lb/in³	12.0	J/cm <sup>3</sup>	Dow Method	
Film Toughness					ASTM D882	
MD	1170	ft·lb/in³	96.8	J/cm³		
TD	1150	ft·lb/in³	95.1	J/cm³		
Secant Modulus					ASTM D882	
1% Secant, MD	32000	psi	221	MPa		
2% Secant, MD	27400	psi	189	MPa		
1% Secant, TD	36000	psi	248	MPa		
2% Secant, TD	30400	psi	210	MPa		
Tensile Strength					ASTM D882	
MD : Yield	1550	psi	10.7	MPa		
TD : Yield	1600	psi	11.0	MPa		
MD : Break	5300	psi	36.5	MPa		
TD : Break	3900	psi	26.9	MPa		
Tensile Elongation					ASTM D882	
MD : Break	580	%	580	%		
TD : Break	690	%	690	%		
Dart Drop Impact	90	g	90	g	ASTM D1709A	
Elmendorf Tear Strength <sup>2</sup>					ASTM D1922	
MD	170	g	170	g		
TD	320	g	320	g		
Thermal	Nominal Value	(English)	Nominal Value	(SI)	Test Method	
Vicat Softening Temperature	216	°F	102	°C	ASTM D1525	
Melting Temperature (DSC)	250	°F	121	°C	ISO 3146	

Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Gloss (45°)	33	33	ASTM D2457
Haze	19.0 %	19.0 %	ASTM D1003

## **Extrusion Notes**

Fabrication Conditions For Blown Film:

- Screw Size: 3.5in.; 30:1ratio L/D
- Screw Type: DSB II
- Die Gap: 70 mil (1.8 mm)
- Melt Temperature: 420°F
- Output: 12 lb/hr/in. of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5 to 1
- Screw Speed: 39 rpm
- Frost Line Height: 51 in.

## 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> Method B

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