DOWLEX™ 2049G
Polyethylene Resin

Overview

- Linear Low Density Polyethylene
- Excellent tear strength and medium stiffness
- Outstanding toughness and puncture resistance for films used in food contact applications
- Complies with U.S. FDA 21 CFR 177.1520 (c) 3.1a.
- Consult the regulations for complete details.

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.926	g/cm³	0.926	g/cm³	ASTM D792
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	2	mil	38	µm	
Film Puncture Resistance (1.5 mil (38 µm))	37.0	ft·lb/in³	3.06	J/cm³	Dow Method
Film Toughness					ASTM D882
MD : 1.5 mil (38 µm)	1550	ft·lb/in³	128	J/cm³	
TD : 1.5 mil (38 µm)	1690	ft·lb/in³	140	J/cm³	
Secant Modulus					ASTM D882
2% Secant, MD : 1.5 mil (38 µm)	34100	psi	235	MPa	
2% Secant, TD : 1.5 mil (38 µm)	40800	psi	281	MPa	
Tensile Strength					ASTM D882
MD : Yield, 1.5 mil (38 µm)	1920	psi	13.2	MPa	
TD : Yield, 1.5 mil (38 µm)	2140	psi	14.7	MPa	
MD : Break, 1.5 mil (38 µm)	6930	psi	47.8	MPa	
TD : Break, 1.5 mil (38 µm)	6140	psi	42.3	MPa	
Tensile Elongation					ASTM D882
MD : Break, 1.5 mil (38 µm)	630	%	630	%	
TD : Break, 1.5 mil (38 µm)	740	%	740	%	
Dart Drop Impact (1.0 mil (25 µm))	220	g	220	g	ASTM D1709A
Elmendorf Tear Strength					ASTM D1922
MD : 1.5 mil (38 µm)	250	g	250	g	
TD : 1.5 mil (38 µm)	590	g	590	g	
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Vicat Softening Temperature	234	°F	112	°C	ASTM D1525
Melting Temperature (DSC)	250	°F	121	°C	Dow Method
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Gloss (45°, 1.50 mil (38.1 µm))	80		80		ASTM D2457
Haze (1.50 mil (38.1 µm))	9.00	%	9.00	%	ASTM D1003

Extrusion	Nominal Value	(English)	Nominal Value	(SI)
Melt Temperature	405 to 420	°F	207 to 216	°C

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Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 24:1 L/D
- Screw Type: MC-4 with Maddock Mixer
- Die Gap: 40 mil (1.0 mm)
- Melt Temperature: 405-420°F (207-216°C)
- Output: 7 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 50 rpm
- Frost Line Height: 16 in. (406 mm)
- Haul Off Speed: 74 fpm (22 m/min)

Notes

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

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