

DOWLEX™ 2021D

Polyethylene Resin

The Dow Chemical Company

Message:

Linear Low Density Polyethylene

Excellent tear strength, outstanding toughness

Good processability at narrow die gaps

Complies with U.S. FDA 21 CFR 177.1520(c) 3.1a.

Complies with Canadian HPFB No Objection (With Limitations)

Complies with EU, No 10/2011

Consult the regulations for complete details.

General Information			
Additive	Processing aid		
	Anti-caking agent (3000 ppm)		
Agency Ratings	FDA 21 CFR 177.1520(c) 3.1a		
	HPFB (Canada) No Objection 2		
	Europe No 10/2011		
Forms	Particle		
Processing Method	Blow film		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.922	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	25	µm	
Film Puncture Energy	1.58	J	
Film Puncture Force	35.6	N	
Film Puncture Resistance	7.69	J/cm ³	Internal method
Film strength			ASTM D882
MD	80.8	J/cm ³	ASTM D882
TD	90.7	J/cm ³	ASTM D882
secant modulus			ASTM D882
1% secant, MD	226	MPa	ASTM D882
2% secant, MD	204	MPa	ASTM D882
1% secant, TD	255	MPa	ASTM D882
2% secant, TD	223	MPa	ASTM D882
Tensile Strength			ASTM D882
MD: Yield	12.3	MPa	ASTM D882
TD: Yield	12.8	MPa	ASTM D882

MD: Fracture	36.5	MPa	ASTM D882
TD: Fracture	29.2	MPa	ASTM D882
Tensile Elongation			ASTM D882
MD: Fracture	450	%	ASTM D882
TD: Fracture	590	%	ASTM D882
Dart Drop Impact	180	g	ASTM D1709A
Elmendorf Tear Strength			ASTM D1922
MD	350	g	ASTM D1922
TD	710	g	ASTM D1922
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	109	°C	ASTM D1525
Melting Temperature (DSC)	119	°C	Internal method
Optical	Nominal Value	Unit	Test Method
Gloss (45°)	26		ASTM D2457
Haze	25	%	ASTM D1003
Extrusion	Nominal Value	Unit	
Melt Temperature	212	°C	
Extrusion instructions			

Fabrication Conditions For Blown Film:

Die Size: 8 in.

Screw Type: DSB II

Die Gap: 70 mil

Melt Temperature: 413°F

Output: 12 lb/hr/in. of die circumference

Die Diameter: 8 in.

Blow-Up Ratio: 2.5:1

Screw Speed: 41 rpm

Frost Line Height: 39 in.

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