



DOWLEX™ 2021D

The Dow Chemical Company - Polyethylene Resin

Tuesday, November 5, 2019

General Information

Product Description

- 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

Material Status	• Commercial: Active
Availability	• North America
Additive	• Antiblock: 3000 ppm • Processing Aid: Yes • Slip: No
Agency Ratings	• EU No 10/2011 • FDA 21 CFR 177.1520(c) 3.1a • HPFB (Canada) No Objection ¹
Forms	• Pellets
Processing Method	• Blown Film

ASTM & ISO Properties ²

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	0.924		ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	1.0	g/10 min	ASTM D1238
Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	1	mil	
Film Puncture Energy	14.0	in·lb	
Film Puncture Force	8.00	lbf	
Film Puncture Resistance	93.0	ft·lb/in ³	Internal Method
Film Toughness - MD	976	ft·lb/in ³	ASTM D882
Film Toughness - TD	1100	ft·lb/in ³	ASTM D882
Secant Modulus			ASTM D882
1% Secant, MD	32800	psi	
2% Secant, MD	29600	psi	
Secant Modulus			ASTM D882
1% Secant, TD	37000	psi	
2% Secant, TD	32400	psi	
Tensile Strength - MD (Yield)	1780	psi	ASTM D882
Tensile Strength - TD (Yield)	1850	psi	ASTM D882
Tensile Strength - MD (Break)	5290	psi	ASTM D882
Tensile Strength - TD (Break)	4240	psi	ASTM D882
Tensile Elongation - MD (Break)	450	%	ASTM D882
Tensile Elongation - TD (Break)	590	%	ASTM D882
Dart Drop Impact	180	g	ASTM D1709A
Elmendorf Tear Strength - MD	350	g	ASTM D1922
Elmendorf Tear Strength - TD	710	g	ASTM D1922

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Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature	228	°F	ASTM D1525
Melting Temperature (DSC)	246	°F	Internal Method
Optical	Nominal Value	Unit	Test Method
Gloss (45°)	26		ASTM D2457
Haze	25.0	%	ASTM D1003

Processing Information

Extrusion	Nominal Value	Unit
Melt Temperature	413	°F

Extrusion Notes

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.

Notes

¹ With limitations

² Typical properties: these are not to be construed as specifications.