DOW™ LDPE 503A
Low Density Polyethylene Resin

Overview

- A slip and Antiblock additive resin for liners, industrial and clarity
- Optimum gauge range: 1.0-3.0 mil
- Complies with U.S. FDA 21 CFR 177.1520(c)2.2.
- Complies with Canadian HPFB No Objection (With Limitations)
- Complies with EU, No 10/2011
- Consult the regulations for complete details.

Additive

- Antiblock: 1200 ppm
- Slip: 750 ppm
- Processing Aid: No

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.922	g/cm³	0.922	g/cm³	ASTM D792
Base Density [1]	0.922	g/cm³	0.922	g/cm³	Dow Method
Melt Index (190°C/2.16 kg)	1.9	g/10 min	1.9	g/10 min	ASTM D1238
Films	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Film Thickness - Tested	2	mil	51	µm	
Film Puncture Resistance (2.0 mil (51 µm))	34.0	ft·lb/in³	2.81	J/cm³	Dow Method
Film Toughness					ASTM D882
MD : 2.0 mil (51 µm)	2220	ft·lb/in³	184	J/cm³	
TD : 2.0 mil (51 µm)	2290	ft·lb/in³	190	J/cm³	
Tensile Strength					ASTM D882
MD : Yield, 2.0 mil (51 µm)	1740	psi	12.0	MPa	
TD : Yield, 2.0 mil (51 µm)	1780	psi	12.3	MPa	
MD : Break, 2.0 mil (51 µm)	3600	psi	24.8	MPa	
TD : Break, 2.0 mil (51 µm)	3010	psi	20.8	MPa	
Tensile Elongation					ASTM D882
MD : Break, 2.0 mil (51 µm)	520	%	520	%	
TD : Break, 2.0 mil (51 µm)	720	%	720	%	
Dart Drop Impact (2.0 mil (51 µm))	100	g	100	g	ASTM D1709A
Elmendorf Tear Strength					ASTM D1922
MD : 2.0 mil (51 µm)	560	g	560	g	
TD : 2.0 mil (51 µm)	470	g	470	g	
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Vicat Softening Temperature	198	°F	92.2	°C	ASTM D1525
Melting Temperature (DSC)	232	°F	111	°C	Dow Method
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Gloss (45°, 2.00 mil (50.8 µm))	70		70		ASTM D2457
Haze (2.00 mil (50.8 µm))	7.50	%	7.50	%	ASTM D1003

Extrusion	Nominal Value	(English)	Nominal Value	(SI)
Melt Temperature	422	°F	217	°C

Extrusion Notes

Fabrication Conditions For Blown Film:

- Screw Size: 2.5 in. (63.5 mm); 30:1 L/D
- Screw Type: Single Flight Double Mix
- Die Gap: 40 mil (1.02 mm)
- Melt Temperature: 422°F (217°C)
- Output: 10 lb/hr/in. of die circumference
- Die Diameter: 6 in.
- Blow-Up Ratio: 2.5:1
- Screw Speed: 92 rpm
- Frost Line Height: 30 in. (792 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.