Technical Data Sheet

ATTANE™ NG 4701G Ultra Low Density Polyethylene Resin

Description

ATTANE™ NG 4701G Ultra Low Density Polyethylene Resin is a great abuse resistance copolymer offering extremely high impact strength, combined with good tear and exceptional optics. It has the added benefit of being easy to process (low melt temperature, low extruder amps and low screen pack backpressure) which translates into quality film rolls due to its bubble stability.

Main Characteristics

- Ultra low density ethylene/octene copolymer
- High performance film applications

Complies with

- U.S. FDA 21 CFR 177.1520(c)3.2a
- Canadian HPFB No Objection

Consult the regulations for complete details.

Additive

- Antiblock: No
- Processing aid: No
- Slip: No

ASTM & ISO Properties[1]

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Density	0.912	g/cm³	0.912	g/cm³	ASTM[2] D792
Base Density[3]	0.912	g/cm³	0.912	g/cm³	
Melt Index (190°C/2.16 kg)	0.80	g/10 min	0.80	g/10 min	ASTM D1238
Films					
Film Thickness - Tested	1.0	mil	25	µm	
Film Puncture Energy	55.0	in·lb	6.21	J	Internal Method
Film Puncture Force	16.0	lbf	71.2	N	Internal Method
Film Puncture Resistance	400	ft·lb/in³	33.1	J/cm³	Internal Method
Film Toughness					ASTM D882
MD	880	ft·lb/in³	72.8	J/cm³	
TD	820	ft·lb/in³	70.3	J/cm³	

1. Typical properties: these are not to be construed as specifications. Users should confirm results by their own tests
2. ASTM: American Society for Testing and Materials
3. 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.

ASTM & ISO Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Secant Modulus					ASTM D882
1% Secant, MD	20500	psi	141	MPa	
2% Secant, MD	18000	psi	124	MPa	
1% Secant, TD	21500	psi	148	MPa	
2% Secant, TD	19000	psi	131	MPa	
Tensile Strength					ASTM D882
MD: Yield	1300	psi	8.96	MPa	
TD: Yield	1250	psi	8.62	MPa	
MD: Break	6000	psi	41.4	MPa	
TD: Break	5400	psi	37.2	MPa	
Tensile Elongation					ASTM D882
MD: Break	400	%	400	%	
TD: Break	450	%	450	%	
Dart Drop Impact	380	g	380	g	ASTM D1709B
Elmendorf Tear Strength					ASTM D1922
MD	250	g	250	g	
TD	600	g	600	g	
Thermal					
Vicat Softening Temperature	210	°F	99.0	°C	ASTM D1525
Melting Temperature (DSC)	250	°F	121	°C	ISO[4] 3146
Optical					
Gloss (45°)	49		49		ASTM D2457
Haze	11.0	%	11.0	%	ASTM D1003
Extrusion Notes					

Fabrication Conditions for Blown Film

- Screw Size: 3.5 in.
- Screw Type: DSBII
- Die gap: 70 mil (1.8 mm)
- Output: 12 lb/hr/in of die circumference
- Die Diameter: 8 in.
- Blow-Up Ratio: 2.5:1
- Frost Line Height: 39 in.
- Melt Temperature: 425ºF

4. ISO: International Standardization Organization