



Technical Data Sheet

INNATE™ ST51 Precision Packaging Resin

Description

INNATE™ ST51 Precision Packaging Resin is designed for exceptional abuse performance. It offers a unique combination of high stiffness with excellent toughness which enables excellent performance on automated packaging equipment. This product also delivers robust processability.

Complies with

- U.S. FDA, CFR 177.1520(c) 3.2a
- EU, No 10/2011

Consult the regulations for complete details.

Additive

- Antiblock: 3750 ppm
- Slip: No
- Processing Aid: Yes

Properties¹

Physical	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method ²
Density	0.920	g/cm ³	0.920	g/cm ³	ASTM D792
Melt Index (190°C/2.16 kg)	0.85	g/10 min	0.85	g/10 min	ASTM D1238
Films					
Film Thickness - Tested	2.0	mil	51	µm	
Film Puncture Energy	54.9	in·lb	6.20	J	Internal Method
Film Puncture Force	20.7	lbf	92.0	N	Internal Method
Film Puncture Resistance	203	ft·lb/in ³	16.8	J/cm ³	Internal Method
Secant Modulus					ASTM D882
2% Secant, MD	30500	psi	210	MPa	
2% Secant, TD	34400	psi	237	MPa	
Tensile Strength					ASTM D882
MD: Yield	1600	psi	11.0	MPa	
TD: Yield	1670	psi	11.5	MPa	
MD: Break	4280	psi	29.5	MPa	
TD: Break	5950	psi	41.0	MPa	
Tensile Elongation					ASTM D882
MD: Break	450	%	450	%	
TD: Break	600	%	600	%	

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



Properties (Cont.)

Films	Nominal Value	Unit (English)	Nominal Value	Unit (SI)	Test Method
Dart Drop Impact ³	1800	g	1800	g	ASTM D1709
Elmendorf Tear Strength					ASTM D1922
MD	650	g	650	g	
TD	930	g	930	g	
Optical					
Gloss (45°)	40		40		ASTM D2457
Haze	15.0	%	15.0	%	ASTM D1003

Extrusion Notes

Fabrication Conditions for 2 mil Monolayer Blown Film at 100%:

- Die Diameter: 8 in
- Screw Type: DSB II
- Die Gap: 90 mil
- Melt Temperature: 432°F
- Output: 10.34 lb/hr/in. of die circumference
- Screw Size: 3.5 in.
- Blow-up Ratio: 2.5 to 1
- Screw Speed: 36 rpm
- Frost Line Height: 40 in

