

# TOTAL Polypropylene PPR 3221

Polypropylene Random Copolymer

TOTAL Refining & Chemicals

Message:

Polypropylene PPR 3221 is a high clarity, high impact resistance random copolymer especially designed for blow molding applications (mono and multi-layers) for food and non-food packaging of sauces, detergents and soaps, cosmetics and for sheets extrusion.

Total Petrochemicals PPR 3221 is a random copolymer polypropylene with a Melt Flow Index of 1.8 g/min for the manufacturing of films with outstanding optical properties and easy heat weldability in the blown process.

Polypropylene PPR 3221 is intended for food or textile packaging, for lamination films, for protection films as well as for label films.

General Information	
Features	Good Heat Seal
	Heat Sealable
	High Clarity
	High Impact Resistance
	Opticals
	Random Copolymer
Uses	Food Packaging
	Labels
	Laminates
	Packaging
	Sheet
Agency Ratings	EC 1907/2006 (REACH)
RoHS Compliance	RoHS Compliant
Forms	Pellets
Processing Method	Blow Molding
	Blown Film
	Film Extrusion
	Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Density	0.902	g/cm <sup>3</sup>	ISO 1183
Apparent Density	0.53	g/cm <sup>3</sup>	ISO 60
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	1.8	g/10 min	ISO 1133
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	82		ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Strain (Yield)	< 15	%	ISO 527-2
Flexural Modulus	900	MPa	ISO 178

Films	Nominal Value	Unit	Test Method
Film Thickness - Tested	40	μm	
Tensile Stress - MD			ISO 527-3
Yield, 40 μm, Blown Film	35.0	MPa	
Break, 40 μm, Blown Film	70.0	MPa	
Tensile Elongation - MD (Break, 40 μm, Blown Film)	500	%	ISO 527-3
Dart Drop Impact (40 μm, Blown Film)	35	g	ISO 7765-1
Elmendorf Tear Strength <sup>1</sup>			ISO 6383-2
MD : 40.0 μm	3.0	kN/m	
TD : 40.0 μm	20.0	kN/m	
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength			ISO 180
0°C	3.6	kJ/m <sup>2</sup>	
23°C	22	kJ/m <sup>2</sup>	
Thermal	Nominal Value	Unit	Test Method
Vicat Softening Temperature			
--	130	°C	ISO 306/A50
--	67.0	°C	ISO 306/B50
Optical	Nominal Value	Unit	Test Method
Gloss (40.0 μm, Blown Film)	79		ASTM D2457
Haze (40.0 μm, Blown Film)	2.1	%	ASTM D1003
NOTE			
1.	Blown Film		

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