

TOTAL Petrochemicals Polypropylene 4170 is a polypropylene impact copolymer grade with good melt strength for use in the extrusion of blown films.

Benefits. 4170 forms tough films with high dart impact strength, high heat resistance and excellent processability.

FDA. 4170 complies with FDA regulations in paragraph (c) 3.2a of 21 CFR Section 177.1520 and may be used under these provisions for food contact and packaging. This resin may be used for articles or components of articles for contacting food during cooking.

Recommended Applications. 4170 is recommended for use in blown film processes for the manufacture of heavy-duty bags, higher temperature requirement films, and matte-finish labels. It can be used pure or in a variety of blended formulations for monolayer or co-extrusion applications.

Processing. 4170 resin processes on blown film extrusion equipment with typical melt temperatures of 410°F-480°F (210°C-250°C). Call the nearest TOTAL Polypropylene sales office for additional information.

<u>Resin Properties</u> ⁽¹⁾	<u>Typical Value</u>	<u>ASTM Method</u>
Melt Flow, g/10 min.	0.75	D-1238 230°C
Density, g/cc	0.905	D-1505
Melting Point, °F (°C)	320-329 (160-165)	DSC ⁽²⁾
<u>Film Properties - 2 mil (50µm)</u> ^{(1) (3)}		
Haze, %	72	D-1003
Gloss, 45°, %	7	D-2457
Tensile Strength @ Yield, psi (MPa)		
MD	3800 (26)	D-882
TD	3600 (25)	
Tensile Strength @ Break, psi (MPa)		
MD	8500 (59)	D-882
TD	5500 (38)	
Elongation @ Break, %		
MD	750	D-882
TD	770	
2% Secant Modulus, psi (MPa)		
MD	100,000 (690)	D-882
TD	87,000 (600)	
Dart Impact Strength (Method A), gr	350	D-1709
WVTR, g/100 in ² /24 hrs @ 100°F, 100% RH	0.45	F-1249
OTR, cc/100 in ² /24 hrs @ 73°F, 0% RH	135	D-3985
Elmendorf Tear Str, gr MD (TD)	55 (300)	D-1922

(1) Data developed under laboratory conditions and are not to be used as specification, maxima or minima.

(2) MP determined with a Differential Scanning Calorimeter. Test procedure available upon request.

(3) Monolayer Blown film conditions: Screw size: 50 mm, Die gap: 0.9 mm, Melt temp: 475°F (245 °C), Die diameter: 118 mm, Blow Up Ratio: 2.5 4170 1/07

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All tests were run under laboratory conditions. ASTM (where applicable) testing procedures. The data are intended as a general guide only and do not necessarily represent results that may be obtained elsewhere. The use of TOTAL products must be guided by the users own methods for selection of proper formulation. TOTAL PETROCHEMICALS USA, INC. disclaims any responsibility for misuse or miss application of its products. TOTAL MAKES NO WARRANTY OF MERCHANTABILITY AND THERE IS NO WARRANTY THAT GOODS SUPPLIED SHALL BE FIT FOR ANY PARTICULAR PURPOSE. TOTAL'S liability and customer's exclusive remedy for any claims arising out of sales of its products are expressly limited at customer option to replacement of non-performing goods or payment not to exceed the purchase price plus transportation charges thereon in respect to any material which damage is claimed.