

TOPAS® 5013F-04

Developmental grade for film extrusion

Cyclic Olefin Copolymer (COC)

Property	Value	Unit	Test Standard
Physical Properties			
Density	1020	kg/m ³	ISO 1183
Melt volume rate (MVR)	9.0	cm ³ /10min	ISO 1133
MVR test temperature	230	°C	ISO 1133
MVR test load	2.16	kg	ISO 1133
Melt volume rate (MVR) - 2nd value	<0.1	cm ³ /10min	ISO 1133
MVR test temperature - 2nd value	190	°C	ISO 1133
MVR test load - 2nd value	2.16	kg	ISO 1133
Water absorption (23°C-sat)	0.01	%	ISO 62
Thermal Properties			
Glass transition temperature (10°C/min)	134	°C	ISO 11357-1,-2,-3
Mechanical Properties (Film)			
Tensile modulus (machine direction)	2600	MPa	ISO 527-3
Tensile modulus (transverse direction)	2500	MPa	ISO 527-3
Tensile strength @ break (machine direction)	35	MPa	ISO 527-3
Tensile strength @ break (transverse direction)	25	MPa	ISO 527-3
Elongation at break (machine direction)	1.4	%	ISO 527-3
Elongation at break (transverse direction)	1.1	%	ISO 527-3
Elmendorf tear strength (machine direction)	11	g	ISO 6383-2
Elmendorf tear strength (transverse direction)	11	g	ISO 6383-2
Dart Drop Impact Strength, F50	<36	g	ISO 7765-1
Optical Properties (Film)			
Gloss, 60°	>100	%	ISO 2813
Haze	<1	%	ISO 14782
Barrier Properties (Film)			
Water vapor permeability @ 38°C, 90% RH	1.0	g·100µm/(m ² ·day)	ISO 15106-3
Oxygen Permeability @23°C, 50%RH	250.0	cm ³ ·100µm/(m ² ·day·bar)	ASTM D3985
Test Specimen Production (Film)			
Type of extrusion	cast		
Thickness of specimen	0.07	mm	

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