

CALIBRE™ 503-5 TINT

Polycarbonate Resin

Trinseo

Message:

CALIBRE™ 503-5 Polycarbonate resin offers a high melt strength to calibrate effectively a wide range of multi-wall sheet structures from low to medium complexity, such as five wall sheet. CALIBRE 503-5 is a polycarbonate resin specially designed for multi-wall sheet extrusion. CALIBRE 503-5 is specially designed to offer a significantly better sheet surface quality at higher line speeds than a standard linear polycarbonate resin such as CALIBRE 302-5, and has a reduced tendency to display chatter marks. CALIBRE 503-5 contains a UV absorber additive, but sheets for outdoor applications require a protective UV-absorbing cap layer. It is recommended to coextrude a 50 micron thick cap layer from CALIBRE 320UV.

Main Characteristics:

High melt strength: production of low to medium complexity multi-wall sheets

Improved sheet surface quality

Excellent optical properties: reduction in chatter marks

Applications:

Multi-wall Sheets

General Information			
Features	Good Melt Strength		
	Opticals		
	Pleasing Surface Appearance		
Uses	Sheet		
Forms	Pellets		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792, ISO 1183/B
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	5.0	g/10 min	ASTM D1238, ISO 1133
Molding Shrinkage - Flow	0.50 to 0.70	%	ASTM D955, ISO 294-4
Water Absorption			ASTM D570, ISO 62
23°C, 24 hr	0.15	%	
Equilibrium, 23°C, 50% RH	0.32	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2350	MPa	ASTM D638
--	2350	MPa	ISO 527-2/50
Tensile Strength			
Yield ²	62.0	MPa	ASTM D638
Yield	62.0	MPa	ISO 527-2/50
Break ³	73.0	MPa	ASTM D638
Break	73.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Flexural Modulus			

-- ⁵	2350	MPa	ASTM D790
-- ⁶	2350	MPa	ISO 178
Flexural Strength			
-- ⁷	94.0	MPa	ASTM D790
-- ⁸	94.0	MPa	ISO 178
Taber Abrasion Resistance ⁹	20	%	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-30°C	16	kJ/m ²	
23°C	83	kJ/m ²	
Notched Izod Impact			ASTM D256
-30°C	370	J/m	
23°C	930	J/m	
Thermal	Nominal Value	Unit	Test Method
Glass Transition Temperature	147	°C	Internal Method
Vicat Softening Temperature			
--	145	°C	ASTM D1525, ISO 306/B50 6 ¹⁰
--	151	°C	ASTM D1525, ISO 306/A120 7 ¹¹
CLTE - Flow (-40 to 80°C)	6.8E-5	cm/cm/°C	ASTM D696
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542, ISO 489
Transmittance	86.0 to 90.0	%	ASTM D1003
Haze	1.0	%	ASTM D1003
NOTE			
1.	50 mm/min		
2.	50 mm/min		
3.	50 mm/min		
4.	50 mm/min		
5.	Method I (3 point load), 2.0 mm/min		
6.	2.0 mm/min		
7.	Method I (3 point load), 2.0 mm/min		
8.	2.0 mm/min		
9.	CS10F Wheel, 250 g, 300 cycles		
10.	Rate A (50°C/h), Loading 2 (50 N)		
11.	Rate B (120°C/h), Loading 1 (10 N)		

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