TRINSEO™

CALIBRE™ 503-5 TINT
Polycarbonate Resin

Overview

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

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	1.20	g/cm³	1.20	g/cm³	ASTM D792 ISO 1183/B
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	5.0	g/10 min	5.0	g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3	in/in	0.50 to 0.70	%	ASTM D955 ISO 294-4
Water Absorption					
24 hr, 73°F (23°C)	0.15	%	0.15	%	ASTM D570
73°F (23°C), 24 hr	0.15	%	0.15	%	ISO 62
Equilibrium, 73°F (23°C), 50% RH	0.32	%	0.32	%	ASTM D570 ISO 62
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Modulus					
-- [1]	341000	psi	2350	MPa	ASTM D638
--	341000	psi	2350	MPa	ISO 527-2/50
Tensile Strength					
Yield [1]	8990	psi	62.0	MPa	ASTM D638
Yield	8990	psi	62.0	MPa	ISO 527-2/50
Break [1]	10600	psi	73.0	MPa	ASTM D638
Break	10600	psi	73.0	MPa	ISO 527-2/50
Tensile Elongation					
Yield [1]	6.0	%	6.0	%	ASTM D638
Yield	6.0	%	6.0	%	ISO 527-2/50
Flexural Modulus					
-- [2]	341000	psi	2350	MPa	ASTM D790
-- [3]	341000	psi	2350	MPa	ISO 178
Flexural Strength					
-- [2]	13600	psi	94.0	MPa	ASTM D790
-- [3]	13600	psi	94.0	MPa	ISO 178
Taber Abrasion Resistance [4]	20	%	20	%	ASTM D1044

Impact	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Charpy Notched Impact Strength					ISO 179/1eA
-22°F (-30°C)	7.6	ft·lb/in²	16	kJ/m²	
73°F (23°C)	39	ft·lb/in²	83	kJ/m²	
Notched Izod Impact					ASTM D256
-22°F (-30°C)	6.9	ft·lb/in	370	J/m	
73°F (23°C)	17	ft·lb/in	930	J/m	
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Glass Transition Temperature	297	°F	147	°C	Trinseo Method
Vicat Softening Temperature					
--	293	°F	145	°C	ASTM D1525 [5] ISO 306/B50 [5]
--	304	°F	151	°C	ASTM D1525 [6] ISO 306/A120 [6]
CLTE - Flow (-40 to 176°F (-40 to 80°C))	3.8E-5	in/in/°F	6.8E-5	cm/cm/°C	ASTM D696
Optical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Refractive Index	1.586		1.586		ASTM D542 ISO 489
Transmittance	86.0 to 90.0	%	86.0 to 90.0	%	ASTM D1003
Haze	1.0	%	1.0	%	ASTM D1003