

CALIBRE™ 603-3

Trinseo - Polycarbonate Resin

General Information

Product Description

CALIBRE™ 603-3 is a tinted branched polycarbonate resin specially designed for extrusion of profiles, corrugated sheet and very complex multi-wall sheet. CALIBRE™ 603-3 offers a very high melt strength for effective calibration of complex multi-wall sheet structures, such as a seven wall sheet or more, and to calibrate effectively complex profiles and corrugated sheet. CALIBRE™ 603-3 is UV stabilized 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.

Govt. and Industry Standards:

- Underwriters Laboratory, Inc. (UL)

Main Characteristics:

- Very high melt strength
- Good impact resistance

Applications:

- Complex multi-wall sheet
- Profile extrusion
- Blow molded bottles

General

Additive	• Mold Release	• UV Stabilizer	
Features	• Good Melt Strength • Good Optical Properties	• High Heat Resistance • High Impact Resistance	• High Viscosity • Pleasing Surface Appearance
Uses	• Sheet		
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent		
Forms	• Pellets		
Processing Method	• Blow Molding	• Sheet Extrusion	

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.20		ASTM D792
Density	1.20	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	3.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	3.0	g/10 min	ISO 1133
Molding Shrinkage - Flow	0.50 to 0.70	%	ISO 294-4
Water Absorption (Saturation, 73°F)	0.32	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ²	334000	psi	ASTM D638
Tensile Modulus	334000	psi	ISO 527-1/1
Tensile Strength ³ (Yield)	8700	psi	ASTM D638
Tensile Stress (Yield)	8990	psi	ISO 527-2/50
Tensile Strength ³ (Break)	9430	psi	ASTM D638
Tensile Stress (Break)	9430	psi	ISO 527-2/50
Tensile Elongation ³ (Yield)	6.0	%	ASTM D638

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Mechanical	Nominal Value	Unit	Test Method
Tensile Strain (Yield)	6.0	%	ISO 527-2/50
Tensile Elongation ³ (Break)	120	%	ASTM D638
Tensile Strain (Break)	120	%	ISO 527-2/50
Flexural Modulus	350000	psi	ASTM D790
Flexural Modulus ⁴	348000	psi	ISO 178
Flexural Strength	14000	psi	ASTM D790
Flexural Stress ⁴	14100	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	6.7	ft·lb/in ²	
73°F	36	ft·lb/in ²	
Notched Izod Impact (73°F)	16	ft·lb/in	ASTM D256
Notched Izod Impact Strength (73°F)	33	ft·lb/in ²	ISO 180/1A
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	73		
R-Scale	118		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Annealed)	295	°F	ASTM D648
Deflection Temperature Under Load (66 psi, Annealed)	295	°F	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	262	°F	
Deflection Temperature Under Load			ISO 75-2/A
264 psi, Unannealed	259	°F	
Deflection Temperature Under Load (264 psi, Annealed)	289	°F	ASTM D648
Deflection Temperature Under Load (264 psi, Annealed)	289	°F	ISO 75-2/A
Vicat Softening Temperature	309	°F	ASTM D1525 ⁵
Vicat Softening Temperature	309	°F	ISO 306/B50
CLTE - Flow (-40 to 176°F)	3.8E-5	in/in/°F	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Dielectric Strength	430	V/mil	ASTM D149
Dissipation Factor			ASTM D150
50 Hz	1.0E-3		
1 MHz	2.0E-3		
Comparative Tracking Index (0.0787 in, Solution A)	250	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁶			UL 94
0.06 in		HB	
0.12 in		HB	
Glow Wire Flammability Index ⁶			IEC 60695-2-12
0.04 in	1650	°F	
0.08 in	1610	°F	
0.12 in	1610	°F	
Glow Wire Ignition Temperature ⁶			IEC 60695-2-13
0.04 in	1470	°F	
0.08 in	1430	°F	
0.12 in	1430	°F	
Oxygen Index ⁶	26	%	ISO 4589-2

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Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ISO 489
Light Transmittance	87.0 to 91.0	%	ASTM D1003
Haze	< 1.00	%	ASTM D1003

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	248	°F
Drying Time	4.0	hr

Notes

¹ Typical properties: these are not to be construed as specifications.

² 0.039 in/min

³ 2.0 in/min

⁴ 0.079 in/min

⁵ Rate A (50°C/h), Loading 2 (50 N)

⁶ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.