



CALIBRE™ IM 401-18

Trinseo - Polycarbonate Resin

Tuesday, November 5, 2019

General Information

Product Description

CALIBRE™ IM 401-18 Impact Modified Polycarbonate resins is available in opaque formulations that offer benefits ranging from superior low temperature impact strength to easy processing with improved impact strength in highly filled formulations.

Main Characteristics:

- Impact modified
- Superior low temperature toughness

Applications:

- Automotive interiors
- Automotive exteriors
- Small & large appliances

General

Material Status	• Commercial: Active
Availability	• Latin America • North America
Additive	• Impact Modifier
Features	• Good Processability • Impact Modified • Good Toughness • Low Temperature Impact Resistance
Uses	• Appliances • Automotive Exterior Parts • Automotive Applications • Automotive Interior Parts
Automotive Specifications	• CHRYSLER MS-DB-145 CPN3101 Color: Gray • CHRYSLER MS-DB-145 Type A CPN3102 Color: Black • CHRYSLER MS-DB-145 Type A CPN4483 Color: Natural • FORD WSB-M4D627-A • GM GMP.PC.004 • GM GMP.PC.016
Appearance	• Black
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.18		ASTM D792
Density	1.18	g/cm ³	ISO 1183/B
Density	0.0430	lb/in ³	ISO 1183 ²
Melt Mass-Flow Rate (300°C/1.2 kg)	18	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	18	g/10 min	ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	15	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	6.0E-3 to 8.0E-3	in/in	ASTM D955
Molding Shrinkage - Flow	0.60 to 0.80	%	ISO 294-4
Mechanical	Nominal Value	Unit	Test Method
Tensile modulus	334000	psi	ISO 527-2 ²
Tensile Strength ³ (Yield)	8400	psi	ASTM D638
Tensile Stress (Yield)	8410	psi	ISO 527-2/50
Tensile Stress (Yield)	8700	psi	ISO 527-2 ²

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Mechanical	Nominal Value	Unit	Test Method
Tensile Strain (Yield)	6.0	%	ISO 527-2 ²
Tensile Elongation ³ (Break)	110	%	ASTM D638
Tensile Strain (Break)	110	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ²
Flexural Modulus ⁴	330000	psi	ASTM D790
Flexural Modulus ^{5, 6}	329000	psi	ISO 178
Flexural Strength ⁴	13000	psi	ASTM D790
Flexural Stress ^{5, 6}	13100	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy notched impact strength (73°F)	28.6	ft-lb/in ²	ISO 179/1eA ²
Charpy notched impact strength (-22°F)	14.3	ft-lb/in ²	ISO 179/1eA ²
Charpy impact strength (73°F)	No Break		ISO 179/1eU ²
Charpy impact strength (-22°F)	No Break		ISO 179/1eU ²
Notched Izod Impact			
73°F	12	ft-lb/in	ASTM D256
73°F	12	ft-lb/in	ISO 180/4A
Instrumented Dart Impact ⁷ (73°F, Total Energy)	450	in-lb	ASTM D3763
Tensile Impact Strength	280	ft-lb/in ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi)	273	°F	ISO 75-2 ²
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	250	°F	
Heat Deflection Temperature (264 psi, Unannealed)	250	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi, Annealed)	277	°F	ASTM D648
Heat Deflection Temperature (264 psi, Annealed)	277	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi)	246	°F	ISO 75-2 ²
Vicat Softening Temperature	295	°F	ASTM D1525 ⁸
Vicat Softening Temperature	295	°F	ISO 306/B50
Vicat Softening Temperature (50°C/h, B (50N))	284	°F	ISO 306 ²
CLTE - Flow	3.9E-5	in/in/°F	ISO 11359-2 ²
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁹			UL 94
0.06 in	HB		
0.13 in	HB		
Burning Behav. at 1.6mm nom. thickn. (0.06 in, UL)	V-2		ISO 1210 ²
Burning Behav. at thickness h (0.126 in, UL)	V-2		ISO 1210 ²

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Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
- ³ 2.0 in/min
- ⁴ Method I (3 point load), 0.079 in/min
- ⁵ 0.079 in/min
- ⁶ 3-points
- ⁷ 11.1 ft/sec
- ⁸ Rate A (50°C/h), Loading 2 (50 N)
- ⁹ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.