

CALIBRE™ IM 401-18

Polycarbonate Resin

Trinseo

Message:

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 Information			
UL YellowCard	E54680-469989		
Additive	Impact Modifier		
Features	Good Processability		
	Good Toughness		
	Impact Modified		
	Low Temperature Impact Resistance		
Uses	Appliances		
	Automotive Applications		
	Automotive Exterior Parts		
	Automotive Interior Parts		
Appearance	Opaque		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.18	g/cm ³	ASTM D792, ISO 1183/B
--	1190	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	18	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	15.0	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.60 to 0.80	%	ASTM D955, ISO 294-4
Mechanical	Nominal Value	Unit	Test Method
Tensile modulus	2300	MPa	ISO 527-2 ³
Tensile Strength			
Yield ⁴	57.9	MPa	ASTM D638
Yield	58.0	MPa	ISO 527-2/50
Yield	60.0	MPa	ISO 527-2 ⁵

Tensile Strain			
Yield	6.0	%	ISO 527-2 ⁶
Break ⁷	110	%	ASTM D638
Break	110	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ⁸
Flexural Modulus			
-- ⁹	2280	MPa	ASTM D790
--	2270	MPa	ISO 178
Flexural Strength			
-- ¹⁰	89.6	MPa	ASTM D790
--	90.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy notched impact strength			ISO 179/1eA ¹¹
-30°C	30.0	kJ/m ²	
23°C	60.0	kJ/m ²	
Charpy impact strength			ISO 179/1eU ¹²
-30°C	No Break		
23°C	No Break		
Notched Izod Impact (23°C)	640	J/m	ASTM D256, ISO 180/4A
Instrumented Dart Impact ¹³ (23°C, Total Energy)	50.8	J	ASTM D3763
Tensile Impact Strength	588	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa	134	°C	ISO 75-2 ¹⁴
1.8 MPa, Unannealed	121	°C	ASTM D648, ISO 75-2/A
1.8 MPa, Annealed	136	°C	ASTM D648, ISO 75-2/A
1.8 MPa	119	°C	ISO 75-2 ¹⁵
Vicat Softening Temperature			
--	146	°C	ASTM D1525, ISO 306/B50 ⁹ ¹⁶
50°C/h, B (50N)	140	°C	ISO 306 ¹⁷
CLTE - Flow	7.0E-5	cm/cm/°C	ISO 11359-2 ¹⁸
Flammability	Nominal Value		Test Method
Flame Rating ¹⁹			UL 94
1.59 mm	HB		
3.20 mm	HB		
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	V-2		ISO 1210 ²⁰
Burning Behav. at thickness h (3.20 mm, UL)	V-2		ISO 1210 ²¹
NOTE			

1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
3.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
4.	50 mm/min
5.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
7.	50 mm/min
8.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
9.	Method I (3 point load), 2.0 mm/min
10.	Method I (3 point load), 2.0 mm/min
11.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
12.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
13.	3.39 m/sec
14.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
15.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
16.	Rate A (50°C/h), Loading 2 (50 N)
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
19.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
20.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

21.

Tested in accordance with ISO
10350. 23°C/50%r.h. unless
otherwise noted.

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