

CALIBRE™ 893-10

Polycarbonate Resin

Trinseo

Message:

CALIBRE™ 891-10 Series provides superior ignition resistance in opaque applications. The CALIBRE 891-10 series products are available in 2 additive packages: CALIBRE 891: Mold release, CALIBRE 893: Mold release and UV stabilizer.

Main Characteristics:

Underwriters Laboratory Inc. (UL)

Applications:

Electronics

Business equipment

Appliances

General Information			
UL YellowCard	E54680-469984	E54680-469986	E206114-228289
	E206114-228291		
Additive	Mold Release		
	UV Stabilizer		
Features	Flame Retardant		
Uses	Appliances		
	Business Equipment		
	Electrical/Electronic Applications		
Appearance	Opaque		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Tensile Stress vs. Strain (ASTM D638)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.20	g/cm ³	ASTM D792, ISO 1183/A
--	1200	kg/m ³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	10	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	16.0	cm ³ /10min	ISO 1133 ²
Molding Shrinkage - Flow	0.50 to 0.70	%	ASTM D955, ISO 294-4
Water Absorption (23°C, 24 hr)	0.15	%	ASTM D570, ISO 62
Outdoor Suitability	f1		UL 746C
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	59		
R-Scale	123		
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			
-- ³	2380	MPa	ASTM D638
--	2380	MPa	ISO 527-2/50
--	2300	MPa	ISO 527-2 ⁴
Tensile Strength			
Yield ⁵	61.4	MPa	ASTM D638
Yield	61.0	MPa	ISO 527-2/50
Yield	60.0	MPa	ISO 527-2 ⁶
Break ⁷	58.6	MPa	ASTM D638
Break	59.0	MPa	ISO 527-2/50
Tensile Strain			
Yield	6.0	%	ISO 527-2 ⁸
Break ⁹	120	%	ASTM D638
Break	120	%	ISO 527-2/50
Nominal strain at break	> 50	%	ISO 527-2 ¹⁰
Flexural Modulus			
-- ¹¹	2330	MPa	ASTM D790
--	2330	MPa	ISO 178
Flexural Strength			
-- ¹²	97.9	MPa	ASTM D790
--	98.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy notched impact strength			ISO 179/1eA ¹³
-30°C	15.0	kJ/m ²	
23°C	30.0	kJ/m ²	
Charpy impact strength			ISO 179/1eU ¹⁴
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	690	J/m	ASTM D256
23°C	68	kJ/m ²	ISO 180/A
Instrumented Dart Impact ¹⁵ (23°C, Total Energy)	62.1	J	ASTM D3763
Tensile Impact Strength	630	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed	137	°C	ASTM D648
1.8 MPa, Unannealed	127	°C	ASTM D648
1.8 MPa	127	°C	ISO 75-2 ¹⁶
Vicat Softening Temperature			
--	151	°C	ASTM D1525 ¹⁷
50°C/h, B (50N)	151	°C	ISO 306 ¹⁸

CLTE - Flow			
--	6.5E-5	cm/cm/°C	ASTM D696
--	7.0E-5	cm/cm/°C	ISO 11359-2 ¹⁹
Flammability	Nominal Value	Unit	Test Method
Flame Rating ²⁰			UL 94
1.59 mm	V-0		
	V-0		
3.20 mm	5VA		
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	V-0		ISO 1210 ²¹
Burning Behav. at thickness h (3.20 mm, UL)	V-0		ISO 1210 ²²
Burning Behav. 5V at thickness h (3.20 mm, UL)	5VA		ISO 10351 ²³
Oxygen Index ²⁴	36	%	ASTM D2863, ISO 4589-2 3 25
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.	51 mm/min		
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
5.	51 mm/min		
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
7.	51 mm/min		
8.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
9.	51 mm/min		
10.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
11.	Method I (3 point load), 2.0 mm/min		
12.	Method I (3 point load), 2.0 mm/min		
13.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		

14.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
15.	3.39 m/sec
16.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
17.	Loading 2 (50 N)
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
19.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
20.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
21.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
22.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
23.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
24.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
25.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

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