

TOTAL Polystyrene Crystal 1810

General Purpose Polystyrene

TOTAL Refining & Chemicals

Message:

POLYSTYRENE CRYSTAL 1810 is a very easy flowing crystal polystyrene designed for the injection moulding industry. The excellent processing characteristics of this grade allows for the production of articles which are very thin and/or have complex flow patterns. In extrusion, POLYSTYRENE CRYSTAL 1810 is used as a high gloss capping layer in co-extrusion.

General Information			
Features	Food Contact Acceptable		
	Good Flow		
	Good Processability		
	High Gloss		
Uses	Appliance Components		
	Business Equipment		
	Masterbatch		
	Thin-walled Parts		
	Toys		
	Writing Instruments		
Agency Ratings	EC 1907/2006 (REACH)		
Forms	Pellets		
Processing Method	Coextrusion		
	Extrusion		
	Injection Molding		
Multi-Point Data	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method
Density			
--	1.05	g/cm ³	ISO 1183
--	1050	kg/m ³	ISO 1183 ¹
Apparent Density	0.60	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	20	g/10 min	ISO 1133
Melt volume-flow rate (200°C/5.0 kg)	21.0	cm ³ /10min	ISO 1133 ²
Molding Shrinkage	0.40 to 0.70	%	ISO 294-4
Water Absorption			
23°C, 24 hr	< 0.10	%	ISO 62
Saturation	0.10	%	ISO 62 ³
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (L-Scale)	70		ISO 2039-2

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	3100	MPa	ISO 527-2
--	3000	MPa	ISO 527-2 ⁴
Tensile Stress			
Break	42.0	MPa	ISO 527-2
Break	40.0	MPa	ISO 527-2 ⁵
Tensile Strain (Break)	2.0	%	ISO 527-2
Tensile Creep Modulus (1 hr)	2900	MPa	ISO 899-1 ⁶
Flexural Modulus	2900	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			
--	8.0	kJ/m ²	ISO 179/1eU
23°C	12.0	kJ/m ²	ISO 179/1eU ⁷
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
1.8 MPa, Unannealed	72.0	°C	ISO 75-2/A
1.8 MPa, Annealed	81.0	°C	ISO 75-2/A
1.8 MPa	84.5	°C	ISO 75-2 ⁸
Vicat Softening Temperature			
--	90.0	°C	ISO 306/A50
--	85.0	°C	ISO 306/B50
50°C/h, B (50N)	82.0	°C	ISO 306 ⁹
CLTE			
Flow	7.1E-5	cm/cm/°C	ISO 11359-2
Transverse	7.0E-5	cm/cm/°C	ISO 11359-2 ¹⁰
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	> 1.0E+15	ohms	IEC 60093
--	1.0E+14	ohms	IEC 60093 ¹¹
Electric Strength	140	kV/mm	IEC 60243-1
NOTE			
1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
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4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		

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

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