

STYRON™ 678E

General Purpose Polystyrene Resin

Trinseo

Message:

STYRON™ 678E is a general purpose polystyrene with high flow and good toughness. It is designed for injection molding cap coating and for use either pure or in a mixture with other easy flowing high impact polymers in injection molding applications.

Applications:

Thin-walled containers

Coextrusion cap coating

Complies with:

Europe EU-Directive 2002/72/EC by Europe REGULATION (EC) 10/2011

U.S. FDA 21 CFR 177.1640

Consult the regulations for complete details.

General Information	
UL YellowCard	E162447-238291
Features	Good Toughness
	High Flow
	High Impact Resistance
Uses	Containers
	General Purpose
	Thin-walled Parts
Agency Ratings	EU 2002/72/EC
	EU No 10/2011
	FDA 21 CFR 177.1640
Appearance	Clear/Transparent
Forms	Pellets
Processing Method	Blow Molding
	Extrusion
	Injection Molding
	Sheet Extrusion
	Thermoforming

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)	11	g/10 min	ISO 1133
Melt volume-flow rate (200°C/5.0 kg)	11.0	cm ³ /10min	ISO 1133 ²

Water Absorption			ISO 62 ³
Saturation	0.0	%	
Equilibrium	0.0	%	
Viscosity number	91.0	cm ³ /g	ISO 307, 1157, 1628 ⁴
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	105		ISO 2039-2
Ball Indentation Hardness	150	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile modulus	3300	MPa	ISO 527-2 ⁵
Tensile Stress			
Yield	43.0	MPa	ISO 527-2/5
Yield	42.0	MPa	ISO 527-2 ⁶
Tensile Strain			
Yield	2.0	%	ISO 527-2 ⁷
Break	2.0	%	ISO 527-2/5
Nominal strain at break	2.0	%	ISO 527-2 ⁸
Flexural Modulus	3500	MPa	ISO 178
Flexural Stress	80.0	MPa	ISO 178
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Annealed	86.0	°C	ISO 75-2/B
0.45 MPa	82.0	°C	ISO 75-2 ⁹
1.8 MPa, Annealed	82.0	°C	ISO 75-2/A
1.8 MPa	71.0	°C	ISO 75-2 ¹⁰
Vicat Softening Temperature			
--	93.0	°C	ISO 306/A120
--	86.0	°C	ISO 306/B50
50°C/h, B (50N)	86.0	°C	ISO 306 ¹¹
CLTE			ISO 11359-2 ¹²
Flow	8.0E-5	cm/cm/°C	
Transverse	8.0E-5	cm/cm/°C	
Electrical	Nominal Value	Unit	Test Method
Surface resistivity	1.0E+13	ohms	IEC 60093 ¹³
Volume resistivity	> 1.0E+15	ohms·m	IEC 60093 ¹⁴
Electric strength	140	kV/mm	IEC 60243-1 ¹⁵
Relative Permittivity			IEC 60250 ¹⁶
100 Hz	2.50		
1 MHz	2.50		
Dissipation Factor			
1 MHz	6.0E-5		ASTM D150, IEC 60250 ¹⁷
100 Hz	9.0E-5		IEC 60250 ¹⁸
Flammability	Nominal Value	Unit	Test Method

Flame Rating ¹⁹ (1.60 mm)	HB	UL 94
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	HB	ISO 1210 ²⁰
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.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.	
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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.	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.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.	
16.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.	

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.

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