STYRON™ 686E

General Purpose Polystyrene Resin

Trinseo

Message:

STYRON™686E is a general-purpose polystyrene, which can be used for molding and extrusion processing. It has an excellent balance between heat resistance, toughness and fluidity. The product has good dimensional stability and excellent transparency.
Application field:
Foamed PS sheets used as packaging materials, such as egg trays
food packaging materials with thin wall structure
Medium and heavy load parts in the field of injection molding
Comply with the following regulations:
EU directive 2002/72/EC
U.S. Food and Drug Administration Regulation 21 CFR 177.1640
Please check the regulations for complete details.

General Information	
UL YellowCard	E162447-238292
Features	Good dimensional stability Heat resistance, high Definition, high Good toughness Compliance of Food Exposure
Uses	Thin wall parts Sheet Food packaging General
Agency Ratings	FDA 21 CFR 177.1640 Europe No 10/2011
Appearance	Clear/transparent
Forms	Particle
Processing Method	Blow molding Extrusion Sheet extrusion molding Thermoforming Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.05	g/cm³	ASTM D792, ISO 1183
--	1050	kg/m³	ISO 1183 [1]

Apparent Density	0.60	g/cm³	ASTM D1895, ISO 60
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	2.5	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (200°C/5.0 kg)	2.50	cm³/10min	ISO 1133 [2]
Water Absorption			ISO 62 [3]
Saturation	0.0	%	ISO 62
Balance	0.0	%	ISO 62
Viscosity Number	103	cm³/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	3650	MPa	ISO 527-2 [5]
Tensile Strength [6] (Yield)	55.0	MPa	ASTM D638, ISO 527-2/5, ISO 527-2 [7]
Tensile Strain			
Yield	3.0	%	ISO 527-2 [8]
Fracture	1.0 - 3.0	%	ASTM D638
Fracture	1.0 - 3.0	%	ISO 527-2/5
Tensile Elongation at Break	3.0	%	ISO 527-2 [9]
Flexural Modulus			
--	3600	MPa	ASTM D790
--	3600	MPa	ISO 178
Flexural Stress	90.0	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Tensile notched impact strength (23°C)	16.0	kJ/m²	ISO 8256/1 [10]
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, annealed	100	°C	ASTM D648, ISO 75-2/B
0.45 MPa	96.0	°C	ISO 75-2 [11]
1.8 MPa, annealed	98.0	°C	ASTM D648, ISO 75-2/A
1.8 MPa	83.0	°C	ISO 75-2 [12]
Vicat Softening Temperature			
--	107	°C	ASTM D1525, ISO 306/A120 7 [13]
--	100	°C	ASTM D1525, ISO 306/B50 8 [14]
50°C/h, B (50N)	100	°C	ISO 306 [15]
Linear thermal expansion coefficient			
Flow	8.0E-5	cm/cm/°C	DIN 53752, ISO 11359-2 [16]
Lateral	7.0E-5	cm/cm/°C	ISO 11359-2 [17]
Thermal Conductivity	0.17	W/m/K	DIN 52612
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+13	ohms	IEC 60093 [18]

Volume Resistivity	> 1.0E+15	ohms·m	IEC 60093 [19]
Dielectric Strength	140	kV/mm	DIN 53481, IEC 60243-1 3 [20]
Dielectric Constant			
1 MHz	2.50		ASTM D150, IEC 60250 [21]
100 Hz	2.50		IEC 60250 [22]
Dissipation Factor			
1 MHz	6.0E-5		ASTM D150, IEC 60250 [23]
100 Hz	9.0E-5		IEC 60250 [24]
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [25] (1.60 mm)	HB		UL 94
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	HB		ISO 1210 [26]
Additional Information			
压缩模塑试件.			
NOTE			
1.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
2.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
3.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
4.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
5.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
6.	Injection molded sample.		
7.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
8.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
9.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
10.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
11.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
12.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
13.	标准 B (120°C/h), 压 力1 (10N)		
14.	速率 A (50°C/h), 载荷2 (50N)		
15.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
16.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		
17.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???		

18.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
19.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
20.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
21.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
22.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
23.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
24.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
25.	This rating is not intended to reflect the danger caused by this or any other material under actual fire conditions.
26.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

Recommended distributors for this material

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