

Styrolux® 656C

Styrene Butadiene Block Copolymer

INEOS Styrolution Group GmbH

Message:

Styrolux® 656C is a clear styrene-butadiene copolymer (SBC) with enhanced flow properties. It is used almost exclusively for injection molding of rigid, tough parts requiring highest levels of clarity and surface gloss. Styrolux 656C is sterilizable by gamma-rays and offers good hinge properties.

General Information			
UL YellowCard	E108538-100840254		
Features	Block Copolymer		
	Good Flow		
	Good Stiffness		
	Good Toughness		
	High Clarity		
	High Gloss		
	Radiation Sterilizable		
Uses	Appliances		
	Bottles		
	Containers		
	Displays		
	Housings		
	Toys		
Appearance	Clear/Transparent		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)		
	Isochronous Stress vs. Strain (ISO 11403-1)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.02	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	15	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (200°C/5.0 kg)	16.0	cm³/10min	ISO 1133
Molding Shrinkage			
Flow	0.65	%	ASTM D955
--	0.30 to 1.0	%	ISO 294-4
Water Absorption (Saturation, 23°C)	0.070	%	ASTM D570, ISO 62
Hardness	Nominal Value	Unit	Test Method

Durometer Hardness (Shore D)	72		ASTM D2240, ISO 868
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	1680	MPa	ASTM D638
--	1800	MPa	ISO 527-2
Tensile Strength			
Yield, 23°C	28.0	MPa	ASTM D638
Yield, 23°C	35.0	MPa	ISO 527-2
Tensile Strain			
Yield, 23°C	2.4	%	ISO 527-2
Break	40	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	20	%	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	1550	MPa	
1000 hr	1050	MPa	
Flexural Modulus			
--	1500	MPa	ASTM D790
--	1900	MPa	ISO 178
Flexural Strength			
--	33.0	MPa	ASTM D790
5.0% Strain	48.0	MPa	
--	48.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	2.0	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	25	kJ/m ²	ISO 179
Notched Izod Impact Strength			ISO 180/A
-30°C	2.0	kJ/m ²	
23°C	3.0	kJ/m ²	
Instrumented Dart Impact			ASTM D3763
Peak force	0.602	J	
Total energy	0.602	J	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	80.6	°C	ASTM D648
0.45 MPa, Annealed	77.0	°C	ISO 75-2/B
1.8 MPa, Unannealed	66.7	°C	ASTM D648
1.8 MPa, Annealed	67.0	°C	ISO 75-2/A
Vicat Softening Temperature			
--	90.0	°C	ASTM D1525 ¹
--	85.0	°C	ISO 306/A50
--	63.0	°C	ISO 306/B50
CLTE - Flow			

--	1.3E-4	cm/cm/°C	ASTM D696
--	6.0E-5 to 9.0E-5	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity			
--	> 1.0E+14	ohms	ASTM D257
--	1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	ASTM D257, IEC 60093
Dielectric Constant			
1.00 mm, 1 MHz	2.50		ASTM D150
100 Hz	2.50		IEC 60250
Dissipation Factor			IEC 60250
100 Hz	3.0E-4		
1 MHz	8.0E-4		
Comparative Tracking Index	600	V	IEC 60112
Optical	Nominal Value	Unit	Test Method
Refractive Index ²	1.579		ASTM D542, ISO 489
Transmittance (550 nm)	90.0	%	ASTM D1003
Haze	1.5	%	ASTM D1003
Injection	Nominal Value	Unit	
Processing (Melt) Temp	180 to 250	°C	
Mold Temperature	30.0 to 50.0	°C	
NOTE			
1.	Rate B (120°C/h), Loading 1 (10 N)		
2.	Sodium D Line		

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