Styrolux® 3G55

Styrene Butadiene Block Copolymer

BASF Corporation

Product Description
Styrolux 3G55 is a thermoplastic styrene-butadiene block copolymer which is suitable for film and sheet extrusion, and thermoforming. It offers and outstanding combination of crystal clarity and excellent toughness. It was designed to provide greater GPPS acceptance than conventional grades.

General			
Material Status	• Commercial: Active		
Availability	• North America		
Additive	• Impact Modifier		
Features	• Good Toughness	• High Clarity	• Impact Modified
Uses	• Film	• Sheet	
Agency Ratings	• FDA Unspecified Rating	• USP Class VI	
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent		
Forms	• Pellets		
Processing Method	• Blow Molding • Extrusion	• Film Extrusion • Injection Molding	• Sheet Extrusion • Thermoforming

Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.01	g/cm³	ASTM D792
--	1010	kg/m³	ISO 1183[2]
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	15	g/10 min	ASTM D1238
Melt volume-flow rate (200°C/5.0 kg)	16.0	cm³/10min	ISO 1133[2]
Molding Shrinkage - Flow	0.65	%	ASTM D955
Water Absorption (Saturation, 23°C)	0.070	%	ASTM D570

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C[3]	1170	MPa	ASTM D638
--	900	MPa	ISO 527-2[2]
Tensile Strength			
Yield, 23°C	16.0	MPa	ASTM D638
Yield	20.0	MPa	ISO 527-2[2]
Tensile Strain			
Yield	2.0	%	ISO 527-2[2]
Break, 23°C	> 300	%	ASTM D638
Nominal strain at break	> 50	%	ISO 527-2[2]
Flexural Modulus			
23°C	760	MPa	ASTM D790
23°C	900	MPa	ISO 178
Flexural Strength			
23°C	17.0	MPa	ASTM D790
23°C	18.0	MPa	ISO 178

Films	Nominal Value	Unit	Test Method
Secant Modulus			ASTM D882
MD: 25.4 µm, Blown Film	835	MPa	
TD: 25.4 µm, Blown Film	685	MPa	
Tensile Elongation			ASTM D882
MD: Break, 25.4 µm, Blown Film	310	%	
TD: Break, 25.4 µm, Blown Film	350	%	
Dart Drop Impact (25.4 µm, Blown Film)	330	g	ASTM D1709
Elmendorf Tear Strength			ASTM D1922
MD: 25.4 µm, Blown Film	830	g	
TD: 25.4 µm, Blown Film	340	g	
Oxygen Transmission Rate			ASTM D3985
23°C, 25.4 µm, Blown Film, 50% RH	7750	cm³/m²/24 hr	
Water Vapor Transmission[4]	26	g/m²/24 hr	ASTM F1249

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Impact	Nominal Value	Unit	Test Method
Charpy notched impact strength			ISO 179/1eA [2]
-30°C	2.00	kJ/m²	
23°C	85.0	kJ/m²	
Charpy Unnotched Impact Strength			ISO 179
-30°C	87	kJ/m²	
23°C	No Break		
Notched Izod Impact (23°C)	No Break		ASTM D256
Unnotched Izod Impact Strength (23°C)	5.00	kJ/m²	ISO 180
Instrumented Dart Impact			ASTM D3763
Energy to Peak Force	10.0	J	
Total Energy	21.1	J	

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed	67.0	°C	ASTM D648
0.45 MPa	62.0	°C	ISO 75-2 [2]
1.8 MPa, Unannealed	46.0	°C	ASTM D648
1.8 MPa	51.0	°C	ISO 75-2 [2]
Vicat Softening Temperature			
--	72.0	°C	ASTM D1525 [5]
50°C/h, B (50N)	35.0	°C	ISO 306 [2]
CLTE			
Flow	0.000075	cm/cm/°C	ISO 11359-2
Transverse	0.000072	cm/cm/°C	ASTM E831

Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	ASTM D257 IEC 60093 [2]
Volume Resistivity			
--	> 1.0E+13	ohm·cm	ASTM D257
--	> 1.0E+11	ohm·m	IEC 60093 [2]
Dielectric Constant			
1.00 mm, 1 MHz	2.50		ASTM D150
100 Hz	2.50		IEC 60250 [2]
1 MHz	2.50		IEC 60250 [2]
Dissipation Factor			IEC 60250 [2]
100 Hz	3.0		
1 MHz	8.0		
Comparative tracking index	600		IEC 60112 [2]
Electric Strength (1.50 mm)	80	kV/mm	IEC 60243-1

Optical	Nominal Value	Unit	Test Method
Refractive Index	1.570		ASTM D542
Transmittance	90.0	%	ASTM D1003
Haze (25.4 µm, Blown Film)	1.6	%	ASTM D1003

Injection	Nominal Value	Unit
Processing (Melt) Temp	180 to 250	°C
Mold Temperature	30.0 to 50.0	°C

Extrusion	Nominal Value	Unit
Melt Temperature	190 to 230	°C

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Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.

[3] 51 mm/min

[4] 23°C, 100% RH, 1 mil, Blown Film

[5] Rate B (120°C/h), Loading 1 (10 N)