

LEXAN™ 223S resin

Polycarbonate
SABIC Innovative Plastics Asia Pacific

Message:
17.5 MFR, for small, intricate parts. Improved flame retardance. Internal mold release. UV stabilized.

General Information			
UL YellowCard	E45587-236871		
Additive	Mold Release		
	UV Stabilizer		
Features	Flame Retardant		
Uses	Engineering Parts		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792
Specific Volume	0.830	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	18	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
Water Absorption			ASTM D570
24 hr	0.15	%	
Equilibrium, 23°C	0.35	%	
Equilibrium, 100°C	0.58	%	
Outdoor Suitability	f1		UL 746C
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	70		
R-Scale	118		
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ¹			ASTM D638
Yield	62.0	MPa	
Break	65.0	MPa	
Tensile Elongation ²			ASTM D638
Yield	7.0	%	
Break	110	%	
Flexural Modulus ³ (50.0 mm Span)	2340	MPa	ASTM D790
Flexural Strength ⁴ (Yield, 50.0 mm Span)	93.0	MPa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	10.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method

Charpy Notched Impact Strength ⁵			ISO 179/1eA
-30°C	12	kJ/m ²	
23°C	65	kJ/m ²	
Charpy Unnotched Impact Strength ⁶			ISO 179/1eU
-30°C	No Break		
23°C	No Break		
Notched Izod Impact			
23°C	690	J/m	ASTM D256
-30°C ⁷	11	kJ/m ²	ISO 180/1A
23°C ⁸	65	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	3200	J/m	ASTM D4812
-30°C ⁹	No Break		ISO 180/1U
23°C ¹⁰	No Break		ISO 180/1U
Gardner Impact (23°C)	169	J	ASTM D3029
Tensile Impact Strength ¹¹	546	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed, 6.40 mm	137	°C	
1.8 MPa, Unannealed, 6.40 mm	132	°C	
Vicat Softening Temperature	154	°C	ASTM D1525 ¹²
CLTE - Flow (-40 to 95°C)	6.8E-5	cm/cm/°C	ASTM E831
Specific Heat	1260	J/kg/°C	ASTM C351
Thermal Conductivity	0.25	W/m/K	ASTM C177
RTI Elec	100	°C	UL 746
RTI Imp	100	°C	UL 746
RTI Str	100	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+17	ohms · cm	ASTM D257
Dielectric Strength (3.20 mm, in Air)	15	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
50 Hz	3.17		
60 Hz	3.17		
1 MHz	2.96		
Dissipation Factor			ASTM D150
50 Hz	9.0E-4		
60 Hz	9.0E-4		
1 MHz	0.010		
Comparative Tracking Index (CTI)	PLC 2		UL 746
High Amp Arc Ignition (HAI)	PLC 1		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 4		UL 746

Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
0.750 mm	V-2		
5.99 mm	V-0		
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542
Transmittance (2540 μm)	88.0	%	ASTM D1003
Haze (2540 μm)	1.0	%	ASTM D1003
Injection	Nominal Value	Unit	
Drying Temperature	121	°C	
Drying Time	3.0 to 4.0	hr	
Drying Time, Maximum	48	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	260 to 282	°C	
Middle Temperature	271 to 293	°C	
Front Temperature	282 to 304	°C	
Nozzle Temperature	277 to 299	°C	
Processing (Melt) Temp	282 to 304	°C	
Mold Temperature	71.1 to 93.3	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			
1.	Type I, 50 mm/min		
2.	Type I, 50 mm/min		
3.	1.3 mm/min		
4.	1.3 mm/min		
5.	80*10*3 sp=62mm		
6.	80*10*3 sp=62mm		
7.	80*10*3		
8.	80*10*3		
9.	80*10*3		
10.	80*10*3		
11.	Type S		
12.	Rate B (120°C/h), Loading 2 (50 N)		

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