

LEXAN™ 503R resin

Polycarbonate

SABIC Innovative Plastics Europe

Technical Data

Product Description

LEXAN 503R is a medium viscosity, 10% glass reinforced, UV-stabilized, flame retardant grade, especially designed for applications requiring high rigidity together with high heat resistance and excellent impact performance.

General

Filler / Reinforcement	• Glass Fiber Reinforcement, 10% Filler by Weight		
Additive	• Flame Retardant	• UV Stabilizer	
Features	• Flame Retardant • Good Impact Resistance	• High Heat Resistance • High Rigidity	• Medium Viscosity
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

Physical	Nominal Value Unit	Test Method
Density	1.25 g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	8.00 cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ⁴	0.20 to 0.60 %	Internal Method
Water Absorption		ISO 62
Saturation, 23°C	0.31 %	
Equilibrium, 23°C, 50% RH	0.13 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus	3300 MPa	ISO 527-2/1
Tensile Stress		ISO 527-2/5
Yield	60.0 MPa	
Break	45.0 MPa	
Tensile Strain		ISO 527-2/5
Yield	5.0 %	
Break	7.0 %	
Flexural Modulus ⁵	3400 MPa	ISO 178
Flexural Strength ^{5, 6}	95.0 MPa	ISO 178
Taber Abrasion Resistance		Internal Method
1000 Cycles, 1000 g, CS-17 Wheel	11.0 mg	

Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength		
-30°C ⁷	9.0 kJ/m ²	ISO 179/1eA
23°C ⁷	10 kJ/m ²	ISO 179/1eA
23°C	15 kJ/m ²	ISO 179/2C
Charpy Unnotched Impact Strength ⁷		ISO 179/1eU
-30°C	No Break	
23°C	No Break	
Notched Izod Impact Strength ⁸		ISO 180/1A
-30°C	8.0 kJ/m ²	
23°C	10 kJ/m ²	

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Impact	Nominal Value Unit	Test Method
Unnotched Izod Impact Strength ⁸		ISO 180/1U
-30°C	130 kJ/m²	
23°C	No Break	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness (H 358/30)	110 MPa	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Heat Deflection Temperature		
0.45 MPa, Unannealed, 100 mm Span ⁹	140 °C	ISO 75-2/Be
1.8 MPa, Unannealed, 100 mm Span ⁹	132 °C	ISO 75-2/Ae
1.8 MPa, Annealed ¹⁰	136 °C	ISO 75-2/Ae
Vicat Softening Temperature		
--	150 °C	ISO 306/A50
--	141 °C	ISO 306/B50
--	143 °C	ISO 306/B120
Ball Pressure Test (125°C)	Pass	IEC 60695-10-2
CLTE - Flow (23 to 80°C)	0.000040 cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.21 W/m/K	ISO 8302
RTI Elec	120 °C	UL 746
RTI Imp	110 °C	UL 746
RTI Str	120 °C	UL 746
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	> 1.0E+15 ohm	IEC 60093
Volume Resistivity	> 1.0E+15 ohm·cm	IEC 60093
Electric Strength		IEC 60243-1
1.00 mm ¹¹	18 kV/mm	
3.20 mm, in Oil	16 kV/mm	
Relative Permittivity		IEC 60250
50 Hz	2.90	
60 Hz	2.90	
1 MHz	2.80	
Dissipation Factor		IEC 60250
50 Hz	0.0010	
60 Hz	0.0010	
1 MHz	0.010	
Comparative Tracking Index		IEC 60112
--	175 V	
Solution B	100 V	
Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
1.50 mm	V-0	
3.00 mm	5VA	
Glow Wire Flammability Index (1.00 mm)	960 °C	IEC 60695-2-12
Oxygen Index	36 %	ISO 4589-2
Injection	Nominal Value Unit	
Drying Temperature	120 °C	
Drying Time	2.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	
Hopper Temperature	60.0 to 80.0 °C	
Rear Temperature	270 to 300 °C	
Middle Temperature	280 to 310 °C	
Front Temperature	290 to 320 °C	
Nozzle Temperature	280 to 310 °C	

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Injection	Nominal Value Unit
Processing (Melt) Temp	290 to 320 °C
Mold Temperature	80.0 to 120 °C