

# SABIC LEXAN™ VR2220

Mid-flow, UV stabilized polycarbonate resin with mold release. Available in limited transparent tints, limited package types, and must meet minimum order quantity requirements  
Information provided by SABIC

Physical Properties	Metric	English	Comments
Specific Gravity	1.20 g/cc	1.20 g/cc	ASTM D792
Density	1.20 g/cc	0.0434 lb/in <sup>3</sup>	ISO 1183
Water Absorption	0.35 %	0.35 %	23°C/sat; ISO 62
Moisture Absorption at Equilibrium	0.35 %	0.35 %	ASTM D570
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	SABIC method
	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC method
Melt Flow	9.0 g/10 min @Load 1.20 kg, Temperature 300 °C	9.0 g/10 min @Load 2.65 lb, Temperature 572 °F	cm <sup>3</sup> /10 min; ISO 1133
	10.5 g/10 min @Load 1.20 kg, Temperature 300 °C	10.5 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D1238
Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	120	120	ASTM D785
	120	120	ISO 2039-2
Tensile Strength, Yield	63.0 MPa	9140 psi	50 mm/min; ASTM D638
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	>= 70 %	>= 70 %	50mm/min; ASTM D638
	>= 70 %	>= 70 %	50mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	50 mm/min; ISO 527
	7.0 %	7.0 %	50 mm/min; ASTM D638
Tensile Modulus	2.35 GPa	341 ksi	50 mm/min; ASTM D638
	2.35 GPa	341 ksi	1mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
	93.0 MPa	13500 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.30 GPa	334 ksi	2 mm/min; ISO 178
	2.30 GPa	334 ksi	1.3 mm/min, 50 mm span; ASTM D790
Izod Impact, Notched	8.00 J/cm	15.0 ft-lb/in	ASTM D256
Izod Impact, Unnotched	NB	NB	ASTM D4812
Izod Impact, Notched (ISO)	70.0 kJ/m <sup>2</sup>	33.3 ft-lb/in <sup>2</sup>	80*10*3; ISO 180/1A

	12.0 kJ/m <sup>2</sup> @Temperature -30.0 °C	5.71 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	80*10*3; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB @Temperature -30.0 °C	NB @Temperature -22.0 °F	80*10*3; ISO 180/1U
Dart Drop, Total Energy	65.0 J	47.9 ft-lb	peak; ASTM D3763

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	ASTM D257
	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Dielectric Constant	2.96 @Frequency 1e+6 Hz	2.96 @Frequency 1e+6 Hz	ASTM D150
	3.0 @Frequency 60 Hz	3.0 @Frequency 60 Hz	IEC 60250
	3.0 @Frequency 1e+6 Hz	3.0 @Frequency 1e+6 Hz	IEC 60250
	3.0 @Frequency 60 Hz	3.0 @Frequency 60 Hz	ASTM D150
Dielectric Strength	27.0 kV/mm @Thickness 1.60 mm	686 kV/in @Thickness 0.0630 in	ASTM D149
	27.0 kV/mm @Thickness 1.60 mm	686 kV/in @Thickness 0.0630 in	IEC 60243-1
Dissipation Factor	0.0010 @Frequency 60 Hz	0.0010 @Frequency 60 Hz	IEC 60250
	0.0010 @Frequency 60 Hz	0.0010 @Frequency 60 Hz	ASTM D150
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	ASTM D150
	0.010 @Frequency 1e+6 Hz	0.010 @Frequency 1e+6 Hz	IEC 60250

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.4 µm/m-°C @Temperature -40.0 - 95.0 °C	38.0 µin/in-°F @Temperature -40.0 - 203 °F	ASTM E831
	70.0 µm/m-°C @Temperature 23.0 - 80.0 °C	38.9 µin/in-°F @Temperature 73.4 - 176 °F	ISO 11359-2
Thermal Conductivity	0.190 W/m-K	1.32 BTU-in/hr-ft <sup>2</sup> -°F	ASTM C177
	0.200 W/m-K	1.39 BTU-in/hr-ft <sup>2</sup> -°F	ISO 8302
Hot Ball Pressure Test	125 °C	257 °F	IEC 60695-10-2
Deflection Temperature at 0.46 MPa (66 psi)	138 °C	280 °F	Flatw 80*10*4 sp=64mm; ISO 75/Bf

	138 °C @Thickness 3.20 mm	280 °F @Thickness 0.126 in	ASTM D648
Deflection Temperature at 1,8 MPa (264 psi)	127 °C	261 °F	Flatw 80*10*4 sp=64mm; ISO 75/ Af
	127 °C @Thickness 3.20 mm	261 °F @Thickness 0.126 in	ASTM D648
Vicat Softening Point	142 °C	288 °F	Rate B/50; ISO 306
	143 °C	289 °F	Rate B/50; ASTM D1525

Optical Properties	Metric	English	Comments
Refractive Index	1.586	1.586	ASTM D542
	1.586	1.586	ISO 489
Haze	<= 0.80 % @Thickness 2.54 mm	<= 0.80 % @Thickness 0.100 in	ASTM D1003
Transmission, Visible	88 - 90 % @Thickness 2.54 mm	88 - 90 % @Thickness 0.100 in	ASTM D1003

Processing Properties	Metric	English	Comments
Processing Temperature	60.0 - 80.0 °C	140 - 176 °F	Hopper Temperature
Nozzle Temperature	270 - 290 °C	518 - 554 °F	Injection Molding
Zone 1	260 - 280 °C	500 - 536 °F	
Zone 2	270 - 290 °C	518 - 554 °F	
Zone 3	280 - 310 °C	536 - 590 °F	
Melt Temperature	280 - 310 °C	536 - 590 °F	
Mold Temperature	80.0 - 110 °C	176 - 230 °F	
Drying Temperature	120 °C	248 °F	Injection Molding
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection Molding
Moisture Content	0.020 %	0.020 %	