

LEXAN™ VR1820 resin

Polycarbonate

SABIC Innovative Plastics Europe

Message:

VR1820 resin is a high flow (MFR = 22 at 300°C/1.2kg), heat and UV stabilized, polycarbonate product with mold release designed for use in the general purpose molding market.

General Information			
Additive	Heat Stabilizer		
	Mold Release		
	UV Stabilizer		
Features	Heat Stabilized		
	High Flow		
RoHS Compliance	RoHS Compliant		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	22	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	21.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow			Internal Method
-- ¹	0.50 to 0.70	%	
3.20 mm	0.50 to 0.70	%	
Water Absorption			
Saturation, 23°C	0.35	%	ISO 62
Equilibrium, 23°C	0.35	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	120		ASTM D785, ISO 2039-2
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ²	2350	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield ³	63.0	MPa	ASTM D638
Yield	63.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	6.0	%	ASTM D638
Yield	6.0	%	ISO 527-2/50
Break ⁵	> 70	%	ASTM D638

Break	> 70	%	ISO 527-2/50
Flexural Modulus			
50.0 mm Span ⁶	2300	MPa	ASTM D790
-- ⁷	2300	MPa	ISO 178
Flexural Stress			
--	90.0	MPa	ISO 178
Yield, 50.0 mm Span ⁸	90.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			
23°C	640	J/m	ASTM D256
-30°C ⁹	12	kJ/m ²	ISO 180/1A
23°C ¹⁰	65	kJ/m ²	ISO 180/1A
Unnotched Izod Impact			
23°C	No Break		ASTM D4812, ISO 180/1U
-30°C ¹¹	No Break		ISO 180/1U
Instrumented Dart Impact (23°C, Energy at Peak Load)	55.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Unannealed, 3.20 mm	133	°C	ASTM D648
0.45 MPa, Unannealed, 64.0 mm Span ¹²	133	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	122	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹³	122	°C	ISO 75-2/Af
Vicat Softening Temperature	140	°C	ISO 306/B50, ASTM D1525 ¹⁴
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
CLTE - Flow			
-40 to 95°C	7.0E-5	cm/cm/°C	ASTM E831
23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.20	W/m/K	ASTM C177, ISO 8302
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	> 1.0E+15	ohms·cm	ASTM D257, IEC 60093
Dielectric Strength (1.60 mm)	27	kV/mm	ASTM D149, IEC 60243-1
Dielectric Constant			ASTM D150, IEC 60250
60 Hz	3.00		
1 MHz	3.00		
Dissipation Factor			ASTM D150, IEC 60250
60 Hz	1.0E-3		
1 MHz	0.010		
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ASTM D542, ISO 489
Transmittance (2540 µm)	88.0 to 90.0	%	ASTM D1003
Haze (2540 µm)	< 0.80	%	ASTM D1003

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	260 to 280	°C
Middle Temperature	270 to 290	°C
Front Temperature	280 to 300	°C
Nozzle Temperature	270 to 290	°C
Processing (Melt) Temp	280 to 300	°C
Mold Temperature	80.0 to 100	°C

NOTE

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|-----|------------------------------------|
| 1. | Tensile Bar |
| 2. | 50 mm/min |
| 3. | Type I, 50 mm/min |
| 4. | Type I, 50 mm/min |
| 5. | Type I, 50 mm/min |
| 6. | 1.3 mm/min |
| 7. | 2.0 mm/min |
| 8. | 1.3 mm/min |
| 9. | 80*10*3 |
| 10. | 80*10*3 |
| 11. | 80*10*3 |
| 12. | 80*10*4 mm |
| 13. | 80*10*4 mm |
| 14. | Rate B (120°C/h), Loading 2 (50 N) |

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