LEXAN™ PK2870 resin

Polycarbonate

SABIC Innovative Plastics

Message:

LEXAN PK2870 polycarbonate resin, global grade, MVR (300C/1.2kg) 2 cm3/10min, high viscosity, branched, blow molding, high melt strength, high impact resistance, Available in transparent colors only. FDA 21CFR177.1580, European food contact regulation EC Directive 2002/72/EC. Designed to be a candidate for water bottle applications.

General Information	
UL YellowCard	E207780-228450
Features	Impact resistance, high Good melt strength Compliance of Food Exposure Viscosity, High Branched polymer structure
Uses	Bottle
Agency Ratings	FDA 21 CFR 177.1580 European 2002/72/EC
Appearance	Available colors Clear/transparent
Processing Method	Extrusion blow molding Injection molding

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.20	g/cm³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	2.5	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR)			ISO 1133
300°C/1.2 kg	2.00	cm³/10min	ISO 1133
300°C/2.16 kg	4.00	cm³/10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	0.50 - 0.70	%	Internal method
Water Absorption			
Saturated, 23°C	0.35	%	ISO 62
Equilibrium, 23°C	0.35	%	ASTM D570
Equilibrium, 100°C	0.58	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.15	%	ISO 62

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	120		ISO 2039-2

Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			
-- [1]	2350	MPa	ASTM D638
--	2350	MPa	ISO 527-2/1
Tensile Strength			
Yield [2]	62.0	MPa	ASTM D638
Yield	65.0	MPa	ISO 527-2/50
Fracture [3]	65.0	MPa	ASTM D638
Fracture	70.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield [4]	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Fracture [5]	> 70	%	ASTM D638
Fracture	> 70	%	ISO 527-2/50
Flexural Modulus			
50.0mm span [6]	2300	MPa	ASTM D790
-- [7]	2300	MPa	ISO 178
Flexural Stress			
--	95.0	MPa	ISO 178
Yield, 50.0mm span [8]	95.0	MPa	ASTM D790
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [9]			ISO 179/1eA
-30°C	50	kJ/m²	ISO 179/1eA
23°C	70	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength [10]			ISO 179/1eU
-30°C	No Break		ISO 179/1eU
23°C	No Break		ISO 179/1eU
Notched Izod Impact			
-30°C	150	J/m	ASTM D256
23°C	750	J/m	ASTM D256
-30°C [11]	55	kJ/m²	ISO 180/1A
23°C [12]	75	kJ/m²	ISO 180/1A
Unnotched Izod Impact			ASTM D4812, ISO 180/1U
-30°C	No Break		ASTM D4812, ISO 180/1U
23°C	No Break		ASTM D4812, ISO 180/1U
Dart Drop Impact (23°C)	170	J	ASTM D3029
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	145	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span [13]	145	°C	ISO 75-2/Bf
1.8 MPa, unannealed, 3.20mm	130	°C	ASTM D648
1.8 MPa, unannealed, 64.0mm span [14]	130	°C	ISO 75-2/Af
Vicat Softening Temperature			

--	150	°C	ASTM D1525, ISO 306/B120 11 [15]
--	149	°C	ISO 306/B50
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
Specific Heat	1250	J/kg/°C	ASTM C351
Thermal Conductivity	0.20	W/m/K	ASTM C177, ISO 8302

Optical	Nominal Value	Unit	Test Method
Refractive Index	1.586		ISO 489
Transmittance (2540 µm)	88.0	%	ASTM D1003
Haze (2540 µm)	< 0.80	%	ASTM D1003

Injection	Nominal Value	Unit
Drying Temperature	121	°C
Drying Time	3.0 - 4.0	hr
Drying Time, Maximum	48	hr
Suggested Max Moisture	0.020	%
Suggested Shot Size	40 - 60	%
Rear Temperature	299 - 321	°C
Middle Temperature	310 - 332	°C
Front Temperature	321 - 343	°C
Nozzle Temperature	316 - 338	°C
Processing (Melt) Temp	321 - 343	°C
Mold Temperature	82.2 - 116	°C
Back Pressure	0.345 - 0.689	MPa
Screw Speed	40 - 70	rpm
Vent Depth	0.025 - 0.076	mm

Extrusion	Nominal Value	Unit
Drying Temperature	116 - 121	°C
Drying Time	4.0 - 6.0	hr
Suggested Max Moisture	0.020	%
Cylinder Zone 1 Temp.	260 - 274	°C
Cylinder Zone 2 Temp.	260 - 274	°C
Cylinder Zone 3 Temp.	260 - 274	°C
Cylinder Zone 4 Temp.	260 - 274	°C
Cylinder Zone 5 Temp.	260 - 274	°C
Adapter Temperature	260 - 274	°C
Die Temperature	268 - 279	°C

Extrusion instructions
Drying Time (Cumulative): 48 hrsHead - Zone 6 - Top Temperature: 260 - 274 °CHead - Zone 7 - Bottom Temperature: 260 - 274 °CMelt Temperature (Parison): 266 - 277 °CMinimum Moisture Content: 0.01 %Mold Temperature: 66 - 93 °CScrew Speed: 15 - 50 rpm

NOTE

1.	50 mm/min
2.	Type 1, 50mm/min
3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*3 sp=62mm
10.	80*10*3 sp=62mm
11.	80*10*3
12.	80*10*3
13.	80*10*4 mm
14.	80*10*4 mm
15.	标准 B (120°C/h), 载荷2 (50N)

Recommended distributors for this material

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