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	
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
RoHS Compliance	RoHS compliance
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]	93.0	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 10 [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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