LEXAN* 3412R Resin

SABIC Innovative Plastics Europe - Polycarbonate

Friday, August 01, 2008

General Information

Product Description

LEXAN 3412R is a high viscosity, 20% glass reinforced grade. It offers excellent flame retardancy and is especially designed for applications requiring high rigidity together with high heat.

General

Material Status	• Commercial: Active	
Availability	• Europe	
Filler / Reinforcement	• Glass Fiber Reinforcement, 20 % Filler by Weight	
Additive	• Ignition Resistant	
Features	• Flame Retardant • High Heat Resistance	• High Rigidity • High Viscosity
RoHS Compliance	• RoHS Compliant	
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM and ISO Properties [1]

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.35 g/cm³	1.35 g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	0.366 in³/10min	6.00 cm³/10min	ISO 1133
Molding Shrinkage (Flow)	0.0020 to 0.0050 in/in	0.20 to 0.50 %	ASTM D955
Water Absorption (73 °F (23 °C), Saturation)	0.29 %	0.29 %	ISO 62
Water Absorption			ISO 62
73 °F (23 °C), Equilibrium, 50 % RH	0.12 %	0.12 %	
Mechanical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Tensile Modulus	870000 psi	6000 MPa	ISO 527-2/1
Tensile Stress (Break)	13100 psi	90.0 MPa	ISO 527-2/5
Tensile Strain (Break)	2.0 %	2.0 %	ISO 527-2/5
Flexural Modulus [2]	798000 psi	5500 MPa	ISO 178
Flexural Strength [2, 3]	17400 psi	120 MPa	ISO 178
Taber Abrasion Resistance [4] (1000 Cycles)	17.0 mg	17.0 mg	ASTM D1044
Impact	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Charpy Notched Impact Strength			
-22 °F (-30 °C) [5]	2.38 ft·lb/in²	5.00 kJ/m²	ISO 179/1eA
73 °F (23 °C) [5]	2.86 ft·lb/in²	6.00 kJ/m²	ISO 179/1eA
73 °F (23 °C)	4.28 ft·lb/in²	9.00 kJ/m²	ISO 179/2C
Charpy Unnotched Impact Strength [5]			ISO 179/1eU
-22 °F (-30 °C)	19.0 ft·lb/in²	40.0 kJ/m²	
73 °F (23 °C)	19.0 ft·lb/in²	40.0 kJ/m²	
Notched Izod Impact Strength [6]			ISO 180/1A
-22 °F (-30 °C)	2.86 ft·lb/in²	6.00 kJ/m²	
73 °F (23 °C)	3.33 ft·lb/in²	7.00 kJ/m²	
Unnotched Izod Impact Strength [6]			ISO 180/1U
-22 °F (-30 °C)	16.7 ft·lb/in²	35.0 kJ/m²	
73 °F (23 °C)	16.7 ft·lb/in²	35.0 kJ/m²	

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Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Ball Indentation Hardness - H 358/30	18100 psi	125 MPa	ISO 2039-1
Thermal	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Heat Deflection Temperature [7]			ISO 75-2/Be
66 psi (0.45 MPa), Unannealed	291 °F	144 °C	
Heat Deflection Temperature [7]			ISO 75-2/Ae
264 psi (1.8 MPa), Unannealed	282 °F	139 °C	
Vicat Softening Temperature			
--	311 °F	155 °C	ISO 306/A50
--	297 °F	147 °C	ISO 306/B50
--	293 °F	145 °C	ISO 306/B120
CLTE (Flow, 73 to 176 °F (23 to 80 °C))	0.000017 in/in/°F	0.000030 cm/cm/°C	ISO 11359-2
Thermal Conductivity	1.5 Btu·in/hr/ft²/°F	0.22 W/m/K	ISO 8302
Ball Pressure Test, 257 °F (125 °C)	Pass	Pass	IEC 60695-10-2
Electrical	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Surface Resistivity	> 1.0E+15 ohms	> 1.0E+15 ohms	IEC 60093
Volume Resistivity	> 1.0E+15 ohm·cm	> 1.0E+15 ohm·cm	IEC 60093
Relative Permittivity			IEC 60250
50 Hz	3.00	3.00	
60 Hz	3.00	3.00	
1E+6 Hz	2.90	2.90	
Dissipation Factor			IEC 60250
50 Hz	0.00100	0.00100	
60 Hz	0.00100	0.00100	
1E+6 Hz	0.01000	0.01000	
Comparative Tracking Index	150 V	150 V	IEC 60112
Electric Strength			IEC 60243-1
0.0315 in (0.800 mm), in Oil	838.20 V/mil	33.00 kV/mm	
0.0394 in (1.00 mm)	508.00 V/mil	20.00 kV/mm	
0.0630 in (1.60 mm), in Oil	635.00 V/mil	25.00 kV/mm	
0.126 in (3.20 mm), in Oil	406.40 V/mil	16.00 kV/mm	
Flammability	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
Flame Rating - UL (0.0591 in (1.50 mm))	V-0	V-0	UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.0394 in (1.000 mm)	1560 °F	850 °C	
0.0630 in (1.60 mm)	1760 °F	960 °C	
Oxygen Index	37 %	37 %	ISO 4589-2
UL 746	**Nominal Value (English)**	**Nominal Value (SI)**	**Test Method**
RTI Str	266 °F	130 °C	UL 746
RTI Imp	257 °F	125 °C	UL 746
RTI Elec	266 °F	130 °C	UL 746

Processing Information

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	248 °F	120 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.020 %	0.020 %
Hopper Temperature	140 to 176 °F	60.0 to 80.0 °C

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Injection	Nominal Value (English)	Nominal Value (SI)
Rear Temperature	518 to 572 °F	270 to 300 °C
Middle Temperature	536 to 590 °F	280 to 310 °C
Front Temperature	554 to 608 °F	290 to 320 °C
Nozzle Temperature	536 to 590 °F	280 to 310 °C
Processing (Melt) Temp	554 to 608 °F	290 to 320 °C
Mold Temperature	176 to 248 °F	80.0 to 120 °C

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 0.079 in/min (2.0 mm/min)

[3] Break

[4] 1000 g, CS-17 Wheel

[5] 80*10*3 sp=62mm

[6] 80*10*3

[7] 120*10*4 mm, 3.94 in (100 mm)