

Durethan® BG 30 X 000000

Polyamide 6

LANXESS Corporation

Message:

PA 6, 30 % glass fibers/glass spheres, injection molding, low tendency to warp

General Information				
UL YellowCard		E245249-473570		
Filler / Reinforcement		Glass Beads \Glass Fiber, 30% Filler by Weight		
Features		Low warpage		
Processing Method		Injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity				
	1.35			
--	1.36	--	g/cm ³	ASTM D792
23°C	1.35	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	ISO 60
Molding Shrinkage				ISO 2577
Vertical flow direction: 280°C, 2.00mm ¹	0.77	--	%	ISO 2577
Vertical flow direction: 120°C, 4 hours, 2.00mm ²	0.16	--	%	ISO 2577
Flow direction: 280°C, 2.00mm ³	0.48	--	%	ISO 2577
Flow direction: 120°C, 4 hours, 2.00mm ⁴	0.12	--	%	ISO 2577
Water Absorption				ISO 62
Saturated, 23°C	7.0	--	%	ISO 62
Equilibrium, 23°C, 50% RH	2.2	--	%	ISO 62
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	185	75.0	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
23°C ⁵	6200	3500	MPa	ASTM D638
23°C	6300	3100	MPa	ISO 527-2/1
Tensile Strength				
Fracture, 23°C	125	64.8	MPa	ASTM D638
Fracture, 23°C	125	65.0	MPa	ISO 527-2/5
Tensile Elongation				
Fracture, 23°C	4.0	9.0	%	ASTM D638

Fracture, 23°C	4.0	10	%	ISO 527-2/5
Tensile Creep Modulus				ISO 899-1
1 hr	--	2400	MPa	ISO 899-1
1000 hr	--	2000	MPa	ISO 899-1
Flexural Modulus				
23°C	5500	2800	MPa	ASTM D790
23°C ⁶	5800	2800	MPa	ISO 178/A
Flexural Strength				
23°C	195	110	MPa	ASTM D790
3.5% strain, 23°C	170	80.0	MPa	ISO 178/A
23°C ⁷	185	100	MPa	ISO 178/A
Flexural Strain at Flexural Strength ⁸ (23°C)	5.0	8.0	%	ISO 178/A
Burning Behavior ⁹	passed	--		ISO 3795
ISO Shortname	PA 6, GR, 14-060, (GB+GF) 30	--		ISO 1874
Residual Moisture Content	0.030 - 0.12		%	Karl Fisher
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°C	< 10	< 10	kJ/m ²	ISO 179/1eA
-30°C	< 10	< 10	kJ/m ²	ISO 179/1eA
23°C	< 10	10	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	40	45	kJ/m ²	ISO 179/1eU
23°C	45	75	kJ/m ²	ISO 179/1eU
Notched Izod Impact				
-40°C, 3.18 mm	48	48	J/m	ASTM D256
23°C, 3.18 mm	59	140	J/m	ASTM D256
-40°C	< 10	< 10	kJ/m ²	ISO 180/1A
-30°C	< 10	< 10	kJ/m ²	ISO 180/1A
Unnotched Izod Impact Strength				ISO 180/1U
-30°C	30	40	kJ/m ²	ISO 180/1U
23°C	35	60	kJ/m ²	ISO 180/1U
Multi-Axial Instrumented Impact Energy				ISO 6603-2
-30°C	1.70	--	J	ISO 6603-2
23°C	2.00	--	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force				ISO 6603-2
-30°C	690	--	N	ISO 6603-2
23°C	700	--	N	ISO 6603-2
Thermal	Dry	Conditioned	Unit	Test Method

Deflection Temperature Under Load				
0.45 MPa, unannealed, 39.9mm	200	--	°C	ASTM D648
0.45 MPa, not annealed	210	--	°C	ISO 75-2/B
1.8 MPa, not annealed	190	--	°C	ISO 75-2/A
1.8 MPa, annealing, 3.99mm	180	--	°C	ASTM D648
Vicat Softening Temperature	> 200	--	°C	ISO 306/B50, ISO 306/B120
Melting Temperature ¹⁰	222	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow: 23 to 55°C	3.0E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 55°C	9.0E-5	--	cm/cm/°C	ISO 11359-2
RTI Elec (1.50 mm)	120	--	°C	UL 746
RTI Imp (1.50 mm)	90.0	--	°C	UL 746
RTI (1.50 mm)	125	--	°C	UL 746
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+14 - 1.0E+16	1.0E+12 - 1.0E+13	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+15	1.0E+11 - 1.0E+12	ohms·cm	IEC 60093
Dielectric Strength				IEC 60243-1
23°C, 1.00 mm	36	30	kV/mm	IEC 60243-1
23°C, 3.00 mm	35	35	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
23°C, 50 Hz ¹¹	4.50	10.0		IEC 60250
23°C, 1 MHz ¹²	4.00	5.00		IEC 60250
23°C, 100 Hz	4.50	16.0		IEC 60250
23°C, 1 MHz	4.00	4.80		IEC 60250
Dissipation Factor				IEC 60250
23°C, 50 Hz	0.015	0.20		IEC 60250
23°C, 100 Hz	0.013	0.31		IEC 60250
	0.018	0.10		
23°C, 1 MHz	0.020	0.060		IEC 60250
Arc Resistance ¹³	--	110	sec	ASTM D495
Comparative Tracking Index				
Solution a	400	--	V	IEC 60112
--	--	450	V	ASTM D3638
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
1.50 mm	HB	--		UL 94
1.60 mm	HB	--		UL 94

3.00 mm	HB	--		UL 94
3.20 mm	HB	--		UL 94
Glow Wire Flammability Index (2.00 mm)	650	--	°C	IEC 60695-2-12
Oxygen Index ¹⁴	23	--	%	ISO 4589-2
Injection	Dry	Unit	Test Method	
Drying Temperature - Dry Air Dryer	80.0		°C	
Drying Time - Dry Air Dryer	2.0 - 6.0		hr	
Processing (Melt) Temp	270 - 290		°C	
Mold Temperature	80.0 - 120		°C	
NOTE				

1.	60x60x2mm, 80°C MT, 600 bar
2.	60x60x2mm
3.	60x60x2mm, 80°C MT, 600 bar
4.	60x60x2mm
5.	1.0 mm/min
6.	2.0 mm/min
7.	2.0 mm/min
8.	2 mm/min
9.	US-FMVSS302
10.	10°C/min
11.	Tinfoil Electrodes
12.	Tinfoil Electrodes
13.	Tungsten Electrodes
14.	Procedure A

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