

Durethan® BM 240 H2.0 901510

Polyamide 6

LANXESS Corporation

Message:

PA 6, 40 % mineral, injection molding, heat-aging stabilized, low tendency to warp, isotopic properties

General Information				
UL YellowCard		E245249-473603		
Filler / Reinforcement		Mineral filler, 40% filler by weight		
Additive		heat stabilizer		
Features		Low warpage		
		Thermal Stability		
Processing Method		Injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity				
	1.46			
--	1.47	--	g/cm ³	ASTM D792
23°C	1.46	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	ISO 60
Molding Shrinkage				ISO 2577
Vertical flow direction: 280°C, 3.00mm ¹	1.2	--	%	ISO 2577
Vertical flow direction: 120°C, 4 hours, 3.00mm ²	0.20	--	%	ISO 2577
Flow direction: 280°C, 3.00mm ³	1.3	--	%	ISO 2577
Flow direction: 120°C, 4 hours, 3.00mm ⁴	0.17	--	%	ISO 2577
Water Absorption				ISO 62
Saturated, 23°C	6.0	--	%	ISO 62
Equilibrium, 23°C, 50% RH	1.9	--	%	ISO 62
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	210	90.0	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
23°C ⁵	6000	2000	MPa	ASTM D638
23°C	6000	2200	MPa	ISO 527-2/1
Tensile Strength				
Fracture, 23°C	84.8	50.3	MPa	ASTM D638

Fracture, 23°C	85.0	50.0	MPa	ISO 527-2/5
Tensile Elongation				
Fracture, 23°C	9.0	35	%	ASTM D638
Fracture, 23°C	7.0	40	%	ISO 527-2/5
Flexural Modulus				
23°C	5400	1800	MPa	ASTM D790
23°C ⁶	5500	2100	MPa	ISO 178/A
Flexural Strength				
23°C	155	64.8	MPa	ASTM D790
3.5% strain, 23°C	140	50.0	MPa	ISO 178/A
23°C ⁷	150	60.0	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, GHR, 14-060, MD40	--		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	12	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				
				ISO 179/1eU
-30°C	90	90	kJ/m ²	ISO 179/1eU
23°C	120 kJ/m ²	No Break		ISO 179/1eU
Notched Izod Impact				
-40°C, 3.18 mm	37	37	J/m	ASTM D256
23°C, 3.18 mm	64	80	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	75	85	kJ/m ²	ISO 180/1U
23°C	100 kJ/m ²	No Break		ISO 180/1U
Multi-Axial Instrumented Impact Energy				
				ISO 6603-2
-30°C	1.60	--	J	ISO 6603-2
23°C	9.20	--	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force				
				ISO 6603-2
-30°C	825	--	N	ISO 6603-2
23°C	3050	--	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	190	--	°C	ISO 75-2/B
1.8 MPa, not annealed	90.0	--	°C	ISO 75-2/A
1.8 MPa, annealing, 3.99mm	105	--	°C	ASTM D648
8.0 MPa, not annealed	50.0	--	°C	ISO 75-2/C
Vicat Softening Temperature				
--	200	--	°C	ISO 306/B50
--	> 200	--	°C	ISO 306/B120
Melting Temperature ¹⁰	222	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow: 23 to 55°C	6.0E-5	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 55°C	7.0E-5	--	cm/cm/°C	ISO 11359-2
RTI Elec				UL 746
0.750 mm	65.0	--	°C	UL 746
1.50 mm	65.0	--	°C	UL 746
RTI Imp				UL 746
0.750 mm	65.0	--	°C	UL 746
1.50 mm	65.0	--	°C	UL 746
RTI				UL 746
0.750 mm	65.0	--	°C	UL 746
1.50 mm	65.0	--	°C	UL 746
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+14 - 1.0E+15	1.0E+12 - 1.0E+13	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+15	1.0E+11	ohms·cm	IEC 60093
Dielectric Strength				IEC 60243-1
23°C, 1.00 mm	35	38	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	5.00	15.0		IEC 60250
23°C, 1 MHz ¹²	4.00	4.00		IEC 60250
23°C, 100 Hz	4.40	15.0		IEC 60250
23°C, 1 MHz	4.00	4.70		IEC 60250
Dissipation Factor				IEC 60250
23°C, 100 Hz	0.011	0.25		IEC 60250
	0.015	0.10		
23°C, 1 MHz	0.015	0.070		IEC 60250

Comparative Tracking Index				
Solution a	525	--	V	IEC 60112
--	--	575	V	ASTM D3638
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.750 mm	HB	--		UL 94
1.50 mm	HB	--		UL 94
3.00 mm	HB	--		UL 94
Glow Wire Flammability Index (2.00 mm)	700	--	°C	IEC 60695-2-12
Oxygen Index ¹³	26	--	%	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	280 - 300		°C	
Mold Temperature	80.0 - 120		°C	
NOTE				
1.	150x105x3mm, 80°C MT, 500 bar			
2.	150x105x3mm			
3.	150x105x3mm, 80°C MT, 500 bar			
4.	150x105x3mm			
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.	Procedure A			

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