

Durethan® BM 240 000000

Polyamide 6

LANXESS GmbH

Message:

PA 6, 40 % mineral, injection molding, isotropic properties, low tendency to warp

General Information				
Filler / Reinforcement		Mineral filler, 40% filler by weight		
Features		Low warpage		
Processing Method		Injection molding		
Physical	Dry	Conditioned	Unit	Test Method
Density (23°C)	1.46	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	ISO 60
Molding Shrinkage				
Vertical flow direction: 280°C, 3.00mm ¹	1.2	--	%	ISO 2577
Vertical flow direction: 120°C, 2 hours, 3.00mm ²	0.20	--	%	ISO 294-4
Flow direction: 280°C, 3.00mm ³	1.3	--	%	ISO 2577
Flow direction: 120°C, 2 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	205	85.0	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
23°C	5630	2140	MPa	ASTM D638
23°C	5800	2200	MPa	ISO 527-2/1
Tensile Strength				
Fracture, 23°C	82.7	53.1	MPa	ASTM D638
Fracture, 23°C	85.0	55.0	MPa	ISO 527-2/5
Tensile Elongation (Break, 23°C)	10	40	%	ASTM D638, ISO 527-2/5
Flexural Modulus				
23°C	5600	2000	MPa	ASTM D790
23°C ⁵	5500	2000	MPa	ISO 178/A
Flexural Strength				
23°C	150	64.8	MPa	ASTM D790

3.5% strain ⁶	145	60.0	MPa	ISO 178/A
23°C ⁷	150	65.0	MPa	ISO 178
Flexural Strain at Flexural Strength ⁸ (23°C)	5.0	8.0	%	
ISO Shortname	PA 6, MHR, 14-060, MD40	--		ISO 1874
Residual Moisture Content	0.030 - 0.12		%	Karl Fisher
Films	Dry	Conditioned	Unit	Test Method
Film Puncture Energy				ISO 6603-2
-- ⁹	3.00	--	J	ISO 6603-2
-- ¹⁰	20.0	65.0	J	ISO 6603-2
Film Puncture Force				ISO 6603-2
-- ¹¹	728	--	N	ISO 6603-2
-- ¹²	3030	--	N	ISO 6603-2
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	80	80	kJ/m ²	ISO 179/1eU
23°C	140 kJ/m ²	No Break		ISO 179/1eU
Notched Izod Impact				ISO 180/1A
-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
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	190	--	°C	ISO 75-2/B
1.8 MPa, not annealed	90.0	--	°C	ISO 75-2/A
Vicat Softening Temperature	> 200	--	°C	ISO 306/B50, ISO 306/B120
Melting Temperature ¹³	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
Flammability	Dry	Conditioned	Unit	Test Method
Glow Wire Flammability Index (2.00 mm)	650	--	°C	IEC 60695-2-12

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.	150x150x3; MT 80°C; 500 Bar
2.	150x150x3
3.	150x150x3; MT 80°C; 500 Bar
4.	150x150x3
5.	2.0 mm/min
6.	2.0 mm/min
7.	2.0 mm/min
8.	Pull Rate: 2 mm/min; 50% RH
9.	-30°C
10.	23°C
11.	-30°C
12.	23°C
13.	10°C/min

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