

Durethan® B 40 SK 000000

Polyamide 6

LANXESS Corporation

Message:

PA 6, non-reinforced, injection molding

General Information				
UL YellowCard	E245249-473565			
Uses	Automotive Applications			
Agency Ratings	EC 1907/2006 (REACH)			
Forms	Pellets			
Processing Method	Injection Molding			
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity				
--	1.14	--	g/cm ³	ASTM D792
23°C	1.14	--	g/cm ³	ISO 1183
Apparent Density	0.70	--	g/cm ³	ISO 60
Molding Shrinkage				
Across Flow : 280°C, 3.00 mm ¹	0.96	--	%	ISO 2577
Across Flow : 120°C, 2 hr, 3.00 mm ²	0.20	--	%	ISO 294-4
Flow : 280°C, 3.00 mm ³	0.90	--	%	ISO 2577
Flow : 120°C, 2 hr, 3.00 mm ⁴	0.21	--	%	ISO 2577
Water Absorption				ISO 62
Saturation, 23°C	10	--	%	
Equilibrium, 23°C, 50% RH	3.0	--	%	
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	150	50.0	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
23°C ⁵	3100	1000	MPa	ASTM D638
-5°C	3200	900	MPa	ISO 527-2/1
Tensile Strength				
Yield, 23°C	84.8	40.0	MPa	ASTM D638
Yield, 23°C	85.0	40.0	MPa	ISO 527-2/50
Break, 23°C	55.2	55.2	MPa	ASTM D638
Tensile Elongation				
Yield, 23°C	4.0	25	%	ASTM D638, ISO 527-2/50

Break, 23°C	> 50	> 50	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	20	> 50	%	ISO 527-2/50
Tensile Creep Modulus				ISO 899-1
1 hr	--	700	MPa	
1000 hr	--	570	MPa	
Flexural Modulus				
23°C	2700	703	MPa	ASTM D790
23°C ⁶	2800	800	MPa	ISO 178/A
Flexural Strength				
5.0% Strain, 23°C	115	35.0	MPa	ASTM D790
3.5% Strain ⁷	95.0	25.0	MPa	ISO 178/A
23°C ⁸	115	35.0	MPa	ISO 178
Flexural Strain at Flexural Strength ⁹ (23°C)	6.0	9.0	%	
Burning Behavior ¹⁰ (> 1.00 mm)	passed	--		ISO 3795
ISO Shortname	PA 6, GR, 22-030	--		ISO 1874
Residual Moisture Content	0.030 to 0.12		%	Karl Fisher
Films	Dry	Conditioned	Unit	Test Method
Film Puncture Energy				ISO 6603-2
-- ¹¹	160	--	J	
-- ¹²	160	165	J	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°C	< 10	< 10	kJ/m ²	
-30°C	< 10	< 10	kJ/m ²	
23°C	< 10	50	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		
23°C	No Break	No Break		
Notched Izod Impact				
23°C, 3.18 mm	69	960	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	No Break	No Break		
23°C	No Break	No Break		
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				

0.45 MPa, Unannealed, 3.99 mm	180	--	°C	ASTM D648
0.45 MPa, Unannealed	150	--	°C	ISO 75-2/B
1.8 MPa, Unannealed, 3.99 mm	60.0	--	°C	ASTM D648
1.8 MPa, Unannealed	55.0	--	°C	ISO 75-2/A
8.0 MPa, Unannealed	45.0	--	°C	ISO 75-2/C
Vicat Softening Temperature	200	--	°C	ISO 306/B50, ISO 306/B120
Melting Temperature ¹³	222	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C	8.0E-5	--	cm/cm/°C	
Transverse : 23 to 55°C	9.0E-5	--	cm/cm/°C	
RTI Elec (1.50 mm)	105	--	°C	UL 746
RTI Imp (1.50 mm)	65.0	--	°C	UL 746
RTI Str (1.50 mm)	75.0	--	°C	UL 746
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+13 to 1.0E+14	1.0E+12 to 1.0E+13	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+15	1.0E+11 to 1.0E+12	ohms·cm	IEC 60093
Electric Strength				IEC 60243-1
23°C, 1.00 mm	30	35	kV/mm	
23°C, 3.00 mm	30	35	kV/mm	
Dielectric Constant				IEC 60250
23°C, 50 Hz ¹⁴	3.80	16.0		
23°C, 1 MHz ¹⁵	3.40	4.70		
23°C, 100 Hz	4.00	20.0		
23°C, 1 MHz	3.50	4.50		
Dissipation Factor				IEC 60250
23°C, 50 Hz	0.050	2.8		
23°C, 100 Hz	0.012	0.19		
	0.020	0.14		
23°C, 1 MHz	0.060	0.40		
Comparative Tracking Index				
Solution A	600	--	V	IEC 60112
Solution B	600	--	V	IEC 60112
--	--	600	V	ASTM D3638
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.800 mm	HB	--		
1.50 mm	HB	--		
1.60 mm	HB	--		

3.00 mm	HB	--		
Glow Wire Flammability Index (2.00 mm)	750	--	°C	IEC 60695-2-12
Oxygen Index ¹⁶	24	--	%	ISO 4589-2
Injection	Dry	Unit	Test Method	
Drying Temperature - Dry Air Dryer	80.0		°C	
Drying Time - Dry Air Dryer	2.0 to 6.0		hr	
Processing (Melt) Temp	260 to 280		°C	
Mold Temperature	80.0 to 100		°C	
NOTE				
1.	150x150x3; MT 80°C; 500 Bar			
2.	150x150x3			
3.	150x150x3; MT 80°C; 500 Bar			
4.	150x150x3			
5.	1.0 mm/min			
6.	2.0 mm/min			
7.	2.0 mm/min			
8.	2.0 mm/min			
9.	Pull Rate: 2 mm/min; 50% RH			
10.	US-FMVSS302			
11.	-30°C			
12.	23°C			
13.	10°C/min			
14.	Tinfoil Electrodes			
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16.	Procedure A			

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