

Durethan® B 30 S 000000

Polyamide 6

LANXESS Corporation

Message:

PA 6, non-reinforced, injection molding

General Information				
UL YellowCard		E245249-473560		
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 : 260°C, 3.00 mm ¹	1.2	--	%	ISO 2577
Across Flow : 120°C, 2 hr, 3.00 mm ²	0.40	--	%	ISO 294-4
Flow : 260°C, 3.00 mm ³	1.0	--	%	ISO 2577
Flow : 120°C, 2 hr, 3.00 mm ⁴	0.32	--	%	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	140	50.0	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				
23°C ⁵	3200	1100	MPa	ASTM D638
-5°C	3200	1000	MPa	ISO 527-2/1
Tensile Strength				
Yield, 23°C	80.0	40.0	MPa	ASTM D638, ISO 527-2/50
Break, 23°C	50.0	60.0	MPa	ASTM D638
Tensile Elongation				
Yield, 23°C	4.0	20	%	ASTM D638, ISO 527-2/50
Break, 23°C	35	> 50	%	ASTM D638
Nominal Tensile Strain at Break (23°C)	20	> 50	%	ISO 527-2/50

Tensile Creep Modulus				ISO 899-1
1 hr	--	800	MPa	
1000 hr	--	600	MPa	
Flexural Modulus				
23°C	2700	703	MPa	ASTM D790
23°C ⁶	2900	850	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	110	35.0	MPa	ISO 178
Flexural Strain at Flexural Strength ⁹ (23°C)	6.0	8.0	%	
Burning Behavior ¹⁰ (> 1.00 mm)	passed	--		ISO 3795
ISO Shortname	PA 6, GR, 14-030	--		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	10.0	--	J	
-- ¹²	12.0	--	J	
Film Puncture Force				ISO 6603-2
-- ¹³	6540	--	N	
-- ¹⁴	5140	--	N	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	< 10	< 10	kJ/m ²	
23°C	< 10	20	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	59	750	J/m	ASTM D256
23°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	160	--	°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 ¹⁵	222	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow : 23 to 55°C	1.0E-4	--	cm/cm/°C	
Transverse : 23 to 55°C	1.1E-4	--	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+12	ohms·cm	IEC 60093
Electric Strength				IEC 60243-1
23°C, 1.00 mm	30	30	kV/mm	
23°C, 3.00 mm	30	35	kV/mm	
Dielectric Constant				IEC 60250
23°C, 50 Hz ¹⁶	3.80	20.0		
23°C, 1 MHz ¹⁷	3.40	4.60		
23°C, 100 Hz	4.00	15.0		
23°C, 1 MHz	3.50	4.00		
Dissipation Factor				IEC 60250
23°C, 50 Hz	0.050	2.3		
23°C, 100 Hz	0.017	0.20		
	0.020	0.12		
23°C, 1 MHz	0.070	0.40		
Comparative Tracking Index				
Solution A ¹⁸	600	--	V	IEC 60112
Solution B	600	--	V	IEC 60112
--	--	600	V	ASTM D3638
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
1.50 mm	V-2	--		
3.00 mm	V-2	--		
Glow Wire Flammability Index (2.00 mm)	750	--	°C	IEC 60695-2-12
Oxygen Index ¹⁹	26	--	%	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.	-30°C
14.	23°C
15.	10°C/min
16.	Tinfoil Electrodes
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18.	Depth of Erosion: 1.30 mm
19.	Procedure A

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Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China



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