

Durethan® B 30 S 000000

Polyamide 6
LANXESS Corporation

Message:
PA 6, non-reinforced, injection molding

General Information				
UL YellowCard	E245249-473560			
Processing Method	Injection molding			
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)			
	Isochronous Stress vs. Strain (ISO 11403-1)			
	Isothermal Stress vs. Strain (ISO 11403-1)			
	Secant Modulus vs. Strain (ISO 11403-1)			
	Shear Modulus vs. Temperature (ISO 11403-1)			
	Specific Volume vs Temperature (ISO 11403-2)			
	Viscosity vs. Shear Rate (ISO 11403-2)			
Physical	Dry	Conditioned	Unit	Test Method
Specific Gravity				
	1.13			
--	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				ISO 2577
Vertical flow direction: 260°C, 3.00mm ¹	1.2	--	%	ISO 2577
Vertical flow direction: 120°C, 4 hours, 3.00mm ²	0.40	--	%	ISO 2577
Flow direction: 260°C, 3.00mm ³	1.0	--	%	ISO 2577
Flow direction: 120°C, 4 hours, 3.00mm ⁴	0.32	--	%	ISO 2577
Water Absorption				ISO 62
Saturated, 23°C	10	--	%	ISO 62
Equilibrium, 23°C, 50% RH	3.0	--	%	ISO 62
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

23°C	3200	1000	MPa	ISO 527-2/1
Tensile Strength				
Yield, 23°C	80.0	40.0	MPa	ASTM D638, ISO 527-2/50
Fracture, 23°C	50.0	60.0	MPa	ASTM D638
Tensile Elongation				
Yield, 23°C	4.0	20	%	ASTM D638, ISO 527-2/50
Fracture, 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	ISO 899-1
1000 hr	--	600	MPa	ISO 899-1
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, 23°C	95.0	25.0	MPa	ISO 178/A
23°C ⁷	110	35.0	MPa	ISO 178/A
Flexural Strain at Flexural Strength ⁸ (23°C)	6.0	8.0	%	ISO 178/A
Burning Behavior ⁹ (> 1.00 mm)	passed	--		ISO 3795
ISO Shortname	PA 6, GR, 14-030	--		ISO 1874
Residual Moisture Content	0.030 - 0.12		%	Karl Fisher
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	< 10	< 10	kJ/m ²	ISO 179/1eA
23°C	< 10	20	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		ISO 179/1eU
23°C	No Break	No Break		ISO 179/1eU
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		ISO 180/1U
23°C	No Break	No Break		ISO 180/1U
Multi-Axial Instrumented Impact Energy				ISO 6603-2
-30°C	10.0	--	J	ISO 6603-2

23°C	12.0	--	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force				ISO 6603-2
-30°C	6540	--	N	ISO 6603-2
23°C	5140	--	N	ISO 6603-2
Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, unannealed, 39.9mm	180	--	°C	ASTM D648
0.45 MPa, not annealed	160	--	°C	ISO 75-2/B
1.8 MPa, not annealed	55.0	--	°C	ISO 75-2/A
1.8 MPa, annealing, 3.99mm	60.0	--	°C	ASTM D648
8.0 MPa, not annealed	45.0	--	°C	ISO 75-2/C
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	1.0E-4	--	cm/cm/°C	ISO 11359-2
Lateral: 23 to 55°C	1.1E-4	--	cm/cm/°C	ISO 11359-2
RTI Elec (1.50 mm)	105	--	°C	UL 746
RTI Imp (1.50 mm)	65.0	--	°C	UL 746
RTI (1.50 mm)	75.0	--	°C	UL 746
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	1.0E+13 - 1.0E+14	1.0E+12 - 1.0E+13	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+15	1.0E+12	ohms·cm	IEC 60093
Dielectric Strength				IEC 60243-1
23°C, 1.00 mm	30	30	kV/mm	IEC 60243-1
23°C, 3.00 mm	30	35	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
23°C, 50 Hz ¹¹	3.80	20.0		IEC 60250
23°C, 1 MHz ¹²	3.40	4.60		IEC 60250
23°C, 100 Hz	4.00	15.0		IEC 60250
23°C, 1 MHz	3.50	4.00		IEC 60250
Dissipation Factor				IEC 60250
23°C, 50 Hz	0.050	2.3		IEC 60250
23°C, 100 Hz	0.017	0.20		IEC 60250
	0.020	0.12		
23°C, 1 MHz	0.070	0.40		IEC 60250
Comparative Tracking Index				

Solution a ¹³	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	--		UL 94
3.00 mm	V-2	--		UL 94
Glow Wire Flammability Index (2.00 mm)	750	--	°C	IEC 60695-2-12
Oxygen Index ¹⁴	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	260 - 280		°C	
Mold Temperature	80.0 - 100		°C	

NOTE

- 150x105x3mm, 80°C MT, 500 bar
- 150x105x3mm
- 150x105x3mm, 80°C MT, 500 bar
- 150x105x3mm
- 1.0 mm/min
- 2.0 mm/min
- 2.0 mm/min
- 2 mm/min
- US-FMVSS302
- 10°C/min
- Tinfoil Electrodes
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- Erosion depth: 1.30mm
- Procedure A

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