

Lanxess Durethan® B 40 SK 000000 Nylon 6

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Unreinforced

Material Notes:

PA 6, non-reinforced, injection molding

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lanxess-Durethan-B-40-SK-000000-Nylon-6.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.14 g/cc	1.14 g/cc	ISO 1183
Bulk Density	0.700 g/cc	0.0253 lb/in ³	ISO 60
Moisture Absorption at Equilibrium	3.0 %	3.0 %	50% RH; ISO 62
Water Absorption at Saturation	10 %	10 %	ISO 62
Linear Mold Shrinkage, Flow	0.0090 cm/cm @Thickness 3.00 mm	0.0090 in/in @Thickness 0.118 in	Mold Temp 80°C; Melt Temp 280°C; 600 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0096 cm/cm @Thickness 3.00 mm	0.0096 in/in @Thickness 0.118 in	Mold Temp 80°C; Melt Temp 280°C; 600 bar; ISO 294-4

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	50.0 MPa	7250 psi	Conditioned; ISO 2039-1
	150 MPa	21800 psi	ISO 2039-1
Tensile Strength, Yield	40.0 MPa	5800 psi	Conditioned; ISO 527-1,-2
	85.0 MPa	12300 psi	ISO 527-1,-2
Elongation at Break	20 %	20 %	ISO 527-1,-2
	>= 50 %	>= 50 %	Conditioned; ISO 527-1,-2
Elongation at Yield	4.0 %	4.0 %	ISO 527-1,-2
	25 %	25 %	Conditioned; ISO 527-1,-2
Tensile Modulus	0.900 GPa	131 ksi	Conditioned; ISO 527-1,-2
	3.20 GPa	464 ksi	ISO 527-1,-2
Flexural Strength	35.0 MPa @Strain 9.00 %	5080 psi @Strain 9.00 %	Conditioned; ISO 178
	115 MPa	16700 psi	

Mechanical Properties	Metric @Strain 6.00 %	English @Strain 6.00 %	ISO 178 Comments
Flexural Yield Strength	25.0 MPa	3630 psi	Conditioned; ISO 178
	@Strain 3.50 %	@Strain 3.50 %	
	95.0 MPa	13800 psi	ISO 178
	@Strain 3.50 %	@Strain 3.50 %	
Flexural Modulus	0.800 GPa	116 ksi	Conditioned; ISO 178
	2.80 GPa	406 ksi	
Izod Impact, Notched (ISO)	<= 10.0 kJ/m ²	<= 4.76 ft-lb/in ²	ISO 180-1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	<= 10.0 kJ/m ²	<= 4.76 ft-lb/in ²	Conditioned; ISO 180-1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	<= 10.0 kJ/m ²	<= 4.76 ft-lb/in ²	ISO 180-1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	<= 10.0 kJ/m ²	<= 4.76 ft-lb/in ²	Conditioned; ISO 180-1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	ISO 180-1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	Conditioned; ISO 180-1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	ISO 180-1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	Conditioned; ISO 180-1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	ISO 179-1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	Conditioned; ISO 179-1eU

Mechanical Properties	@Temperature 23.0 Metric °C	@Temperature 73.4 °F English °F	Comments
	NB	NB	ISO 179-1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	Conditioned; ISO 179-1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	<= 1.00 J/cm ²	<= 4.76 ft-lb/in ²	ISO 179-1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	<= 1.00 J/cm ²	<= 4.76 ft-lb/in ²	ISO 179-1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	<= 1.00 J/cm ²	<= 4.76 ft-lb/in ²	Conditioned; ISO 179-1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	<= 1.00 J/cm ²	<= 4.76 ft-lb/in ²	ISO 179-1eA
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	<= 1.00 J/cm ²	<= 4.76 ft-lb/in ²	Conditioned; ISO 179-1eA
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	5.00 J/cm ²	23.8 ft-lb/in ²	Conditioned; ISO 179-1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Puncture Energy	160 J	118 ft-lb	ISO 6603-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	160 J	118 ft-lb	ISO 6603-2
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	165 J	122 ft-lb	Conditioned; ISO 6603-2
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Creep Modulus, 1 hour	700 MPa	102000 psi	Conditioned; ISO 889-1
Tensile Creep Modulus, 1000 hours	570 MPa	82700 psi	Conditioned; ISO 889-1

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	80.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	44.4 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-1,-2
CTE, linear, Transverse to Flow	90.0 $\mu\text{m}/\text{m}\cdot\text{Å}^\circ\text{C}$	50.0 $\mu\text{in}/\text{in}\cdot\text{Å}^\circ\text{F}$	ISO 11359-1,-2
Melting Point	222 $\text{Å}^\circ\text{C}$	432 $\text{Å}^\circ\text{F}$	ISO 11357-1,-3
Deflection Temperature at 0.46 MPa (66 psi)	150 $\text{Å}^\circ\text{C}$	302 $\text{Å}^\circ\text{F}$	ISO 75-1,-2
Deflection Temperature at 1.8 MPa (264 psi)	55.0 $\text{Å}^\circ\text{C}$	131 $\text{Å}^\circ\text{F}$	ISO 75-1,-2
Deflection Temperature at 8.0 MPa	45.0 $\text{Å}^\circ\text{C}$	113 $\text{Å}^\circ\text{F}$	ISO 75-1,-2
Vicat Softening Point	200 $\text{Å}^\circ\text{C}$	392 $\text{Å}^\circ\text{F}$	120 $\text{Å}^\circ\text{C}/\text{h}$; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
	200 $\text{Å}^\circ\text{C}$	392 $\text{Å}^\circ\text{F}$	50 $\text{Å}^\circ\text{C}/\text{h}$; ISO 306
	@Load 5.10 kg	@Load 11.2 lb	
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	HB	HB	
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Oxygen Index	24 %	24 %	Method A; ISO 4589-2
Glow Wire Test	750 $\text{Å}^\circ\text{C}$	1380 $\text{Å}^\circ\text{F}$	IEC 60695-2-12
	@Diameter 2.00 mm	@Diameter 0.0787 in	
Shrinkage	0.20 %	0.20 %	Molding Post-shrinkage; ISO 294-4
	@Temperature 120 $\text{Å}^\circ\text{C}$, Time 14400 sec	@Temperature 248 $\text{Å}^\circ\text{F}$, Time 4.00 hour	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+11 ohm-cm	1.00e+11 ohm-cm	Conditioned; IEC 60093
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	Conditioned; IEC 60093
	1.00e+14 ohm	1.00e+14 ohm	
Dielectric Constant	3.5	3.5	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Electrical Properties	4.0 Metric	4.0 English	Comments
	@Frequency 100 Hz	@Frequency 100 Hz	
	4.5	4.5	Conditioned; IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	20	20	Conditioned; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	30.0 kV/mm	762 kV/in	IEC 60243-1
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	35.0 kV/mm	889 kV/in	Conditioned; IEC 60243-1
	@Thickness 1.00 mm	@Thickness 0.0394 in	
Dissipation Factor	0.012	0.012	IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.020	0.020	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.135	0.135	Conditioned; IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	0.185	0.185	Conditioned; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Comparative Tracking Index	600 V	600 V	Solution A, Rating; IEC 60112
	600 V	600 V	Solution B, Rating 600 (475) M; IEC 60112

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