

Lanxess Durethan® TP 142-011 900116 Nylon 6

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Impact Grade

Material Notes:

PA 6, non-reinforced, extrusion, blow molding, impact modified, heat-aging stabilized Information provided by LANXESS.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lanxess-Durethan-TP-142-011-900116-Nylon-6.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.07 g/cc	1.07 g/cc	ISO 1183
Moisture Absorption at Equilibrium	2.4 %	2.4 %	50% RH; ISO 62
Water Absorption at Saturation	9.8 %	9.8 %	ISO 62
Linear Mold Shrinkage, Flow	0.0010 cm/cm	0.0010 in/in	Post-shrinkage, 60x60x2; 120Å°C; 4 hour; ISO 294-4
	0.013 cm/cm	0.013 in/in	60x60x2; 260Å°C / MT 80Å°C; 600 bar; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0020 cm/cm	0.0020 in/in	Post-shrinkage, 60x60x2; 120Å°C; 4 hour; ISO 294-4
	0.015 cm/cm	0.015 in/in	60x60x2; 260Å°C / MT 80Å°C; 600 bar; ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	50.0 MPa	7250 psi	d.a.m.; ISO 527-1, -2; 50 mm/min
Elongation at Break	110 %	110 %	d.a.m.; ISO 527-1, -2; 50 mm/min
Elongation at Yield	3.8 %	3.8 %	d.a.m.; ISO 527-1, -2; 50 mm/min
Tensile Modulus	0.470 GPa	68.2 ksi	cond.; ISO 527-1, -2; 1 mm/min
	2.00 GPa	290 ksi	d.a.m.; ISO 527-1, -2; 1 mm/min
Flexural Strength	20.0 MPa	2900 psi	cond., 2 mm/min; ISO 178-A
	@Strain 9.50 %	@Strain 9.50 %	
Flexural Strength	70.0 MPa	10200 psi	d.a.m., 2 mm/min; ISO 178-A
	@Strain 6.00 %	@Strain 6.00 %	
Flexural Yield Strength	14.0 MPa	2030 psi	cond., 2 mm/min; ISO 178-A
	@Strain 3.50 %	@Strain 3.50 %	
Flexural Yield Strength	60.0 MPa	8700 psi	d.a.m., 2 mm/min; ISO 178-A
	@Strain 3.50 %	@Strain 3.50 %	

Mechanical Properties	Metric ^{SI} Pa	English	Comments ^{u/min; ISO 178-A}
	1.80 GPa	261 ksi	d.a.m., 2 mm/min; ISO 178-A
Izod Impact, Notched (ISO)	20.0 kJ/m ²	9.52 ft-lb/in ²	d.a.m.; ISO 180-1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	75.0 kJ/m ²	35.7 ft-lb/in ²	d.a.m.; ISO 180-1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	100 kJ/m ²	47.6 ft-lb/in ²	cond.; ISO 180-1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	d.a.m.; ISO 180-1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	cond.; ISO 180-1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	d.a.m.; ISO 180-1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	d.a.m.; ISO 179-1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	cond.; ISO 179-1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	d.a.m.; ISO 179-1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	cond.; ISO 179-1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	2.00 J/cm ²	9.52 ft-lb/in ²	d.a.m.; ISO 179-1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	9.00 J/cm ²	42.8 ft-lb/in ²	d.a.m.; ISO 179-1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties	°C Metric	English	Comments
	13.0 J/cm ² @Temperature 23.0 °C	61.9 ft-lb/in ² @Temperature 73.4 °F	cond.; ISO 179-1eA
Puncture Energy	64.0 J @Load <=510 kg, Temperature 23.0 °C	47.2 ft-lb @Load <=1120 lb, Temperature 73.4 °F	ISO 6603-2
	64.0 J @Load <=5810 kg, Temperature -30.0 °C	47.2 ft-lb @Load <=12800 lb, Temperature -22.0 °F	ISO 6603-2

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	150 µm/m-°C @Temperature 23.0 - 55.0 °C	83.3 µin/in-°F @Temperature 73.4 - 131 °F	ISO 11359-1, -2
CTE, linear, Transverse to Flow	150 µm/m-°C @Temperature 23.0 - 55.0 °C	83.3 µin/in-°F @Temperature 73.4 - 131 °F	ISO 11359-1, -2
Melting Point	220 °C	428 °F	10°C/min; ISO 11357-1, -3
Deflection Temperature at 0.46 MPa (66 psi)	95.0 °C	203 °F	ISO 75-1, -2
Deflection Temperature at 1.8 MPa (264 psi)	53.0 °C	127 °F	ISO 75-1, -2

Processing Properties	Metric	English	Comments
Melt Temperature	230 - 280 °C	446 - 536 °F	
	260 °C	500 °F	for test specimens; ISO 294
Mold Temperature	60.0 - 90.0 °C	140 - 194 °F	
	80.0 °C	176 °F	for test specimens; ISO 294
Drying Temperature	80.0 °C	176 °F	
Dry Time	2 - 6 hour	2 - 6 hour	
Moisture Content	0.00 - 0.060 %	0.00 - 0.060 %	residual; Karl Fischer Test

Descriptive Properties	Value	Comments
ISO Shortname	ISO 1874-PA 6-HI, BHR, 14-020	

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