



Material Data Sheet: **NYLON 11**

Properties: Material for aerospace, gastanks, and ducts.

	Units	Test Method	Fine Nylon
Powder Properties			
Average Particle Size ⁽¹⁾	Microns	Laser Diffraction	50
Particle Size Range, 90% ⁽¹⁾	Microns	Laser Diffraction	15-90
Powder Density, Tap	g/cm ³	ASTM D4164	0.55
Physcial Properties			
Specific Gravity, 20° C	g/cm ³	ASTM D792	1.04
Moisture Absorption, 68° F, 65% R.H.	%	ASTM D570	1.0
Ash Content	%	ASTM D482	
Permeability	-	AFS 327-87-S	
Thermal Properties			
Melting Point: T _m	°F	DSC	367
Glass Transition: T _g	°F	DSC	
DTUL, 66 psi	°F	ASTM D648	325
DTUL, 264 psi	°F	ASTM D648	111
Thermal Conductivity, 212° F	BTU/hrft ² F	ASTM E457	
Thermal Conductivity, 392° F	BTU/hrft ² F	ASTM E457	
Coefficient Thermal Expansion ⁽²⁾	in/in/°F	ASTM E831	
Gas Evolution	cm ³ /g	Dietert No. 682	
Hot Distortion	min:sec	AFS 326-87-S	
Loss on Ignition ⁽⁴⁾	%	AFS 306-87-S	
Mechanical Properties			
Tensile Strength	lb/in ²	ASTM D638	5,200
Tensile Modulus	lb/in ²	ASTM D638	202,000
Tensile Elongation at Break	%	ASTM D638	32.0
Flexural Modulus	lb/in ²	ASTM D790	126,000
Impact Strength, Notched Izod	ft-lb/in	ASTM D256	1.30
Impact Strength, Unnotched Izod	ft-lb/in	ASTM D256	25.70
Initial Tear Resistance (Die C at 23° C)	ft-lb/in		
Hardness: Durometer Shore A (23° C)	-		
Abrasion Resistance at 1 kg Load	mg/1,000 cycles	Taber CS17	
Abrasion Resistance at 1 kg Load	-	Taber H18	
Yield Strength (0.2%)	lb/in ²	ASTM E8	
Tensile Strength	lb/in ²	ASTM E8	
Elongation	%	ASTM E8	
Young Modulus	lb/in ²	ASTM E8	
Hardness: Rockwell B	-	ASTM E18	
Cold Shell Tensile Strength	lb/in ²	AFS 308-87-S	
(1)Results are based upon volume distribution of particles.		(2)Valid over temperature range of -60° F to 450° F.	
Applications			Functional Snap Fits/ Living Hinges

