HYDLAR® Z natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PA 66 (Polyamide 66)

Colour
yellow-brown

Density
1.19 g/cm^3

Fillers
aramide fibres

Main features
- excellent wear properties
- excellent strength and stiffness
- minimizes mating surface abrasion
- easy to machine
- high mechanical load capacity

Target Industries
- construction industry
- conveyor technology
- gear manufacturing
- power engineering
- mechanical engineering

Mechanical properties	condition	value	unit	test method		comment
Tensile strength		16,000	psi	ASTM D 638	1)	(1) Injection molded samples (2) Extruded - property values dependent upon shape and cross sectional area (3) Injection molded samples (4) Extruded - property values dependent upon shape and cross sectional area (5) Injection molded samples (6) Extruded - property values dependent upon shape and cross sectional area (7) Injection molded samples (8) Extruded - property values dependent upon shape and cross sectional area (9) Injection molded samples (10) Extruded - property values dependent upon shape and cross sectional area (11) Extruded - property values dependent upon shape and cross sectional area (12) Extruded - property values dependent upon shape and cross sectional area (13) Extruded - property values dependent upon shape and cross sectional area (14) Injection molded samples (15) Extruded - property values dependent upon shape and cross sectional area
Tensile strength		9,500	psi	ASTM D 638	2)	
Modulus of elasticity (tensile test)		1,300,000	psi	ASTM D 638	3)	
Modulus of elasticity (tensile test)		940,000	psi	ASTM D 638	4)	
Elongation at break (tensile test)		4	%	ASTM D 638	5)	
Elongation at break (tensile test)		4.0	%	ASTM D 638	6)	
Flexural strength		23,000	psi	ASTM D 790	7)	
Flexural strength		16,145	psi	ASTM D 790	8)	
Modulus of elasticity (flexural test)		900,000	psi	ASTM D 790	9)	
Modulus of elasticity (flexural test)		638,000	psi	ASTM D 790	10)	
Compression strength	@ 73 °F, 1% strain	3,170	psi	ASTM D 695	11)	
Compression strength	@ 73 °F, 10% strain	16,800	psi	ASTM D 695	12)	
Compression modulus		359,000	psi	ASTM D 695	13)	
Impact strength (Izod)		2.7	ft-lbs/in	ASTM D 256	14)	
Impact strength (Izod)		0.82	ft-lbs/in	ASTM D 256	15)	
Rockwell hardness	M Scale (R Scale)	92 (116)		ASTM D 785		
Wear rate	PV=2,500 psi-fpm	79-128	*10^{-10} in^3 -min/ft-lb-hr	ASTM D 3702		

Thermal properties	condition	value	unit	test method		comment
Deflection temperature	@264 psi	470	°F	ASTM D 648	1)	(1) Data obtained from public source (2) Data obtained from public source (3) Data obtained from public source (4) Data obtained from public source
Service temperature	Intermittent	300	°F	-	2)	
Service temperature	Long Term	200	°F	-	3)	
Thermal expansion (CLTE)		$1.6*10^{-5}$	in/in/°F	ASTM D 696	4)	

Other properties	condition	value	unit	test method		comment
Moisture absorption	@ 24 hrs, 73 °F	0.37	%	ASTM D 570		(1) Data obtained from public source
Moisture absorption	@ saturation, 73 °F	6.3	%	ASTM D 570	1)	

- Resin specification:
  ASTM D6779-11 PA0100
  Shapes specification:
  ASTM D 5989
  S-PA0101R2052154000

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