HYDEX® 301 natural - Stock Shapes (rods, plates, tubes)

Chemical Designation
PU (Polyurethane)

Colour
yellow transparent

Density
1.2 %

Main features
- broad chemical compatibility
- very good dimensional stability
- good impact strength
- good mechanical properties
- high toughness

Target Industries
- medical technology
- chemical plant engineering
- oil and gas industry
- pharmaceutical industry
- cleanroom technology

Mechanical properties	condition	value	unit	test method		comment
Modulus of elasticity (tensile test)	@ 73 °F	310,000	psi	ASTM D 638		(1) publicly sourced data (2) publicly sourced data (3) publicly sourced data (4) publicly sourced data (5) publicly sourced data
Tensile strength at yield	@ 73 °F	10,000	psi	ASTM D 638	1)	
Tensile strength at break	@ 73 °F	9,000	psi	ASTM D 638	2)	
Elongation at yield (tensile test)	@ 73 °F	7	%	ASTM D 638	3)	
Elongation at break (tensile test)	@ 73 °F	150	%	ASTM D 638		
Flexural strength	@ 73 °F	14,500	psi	ASTM D 790		
Modulus of elasticity (flexural test)	@ 73 °F	320,000	psi	ASTM D 790		
Compression strength	@ 73 °F, 1% strain	1,200	psi	ASTM D 695		
Compression strength	@ 73 °F, 10% strain	11,700	psi	ASTM D 695		
Compression modulus	@ 73 °F	230,000	psi	ASTM D 695		
Impact strength (Izod)	@ 73 °F	1.10	ft-lbs/in	ASTM D 256		
Rockwell hardness	M	95		-		
Coefficient of friction	Static (vs. steel)	0.22		ASTM D 3702	4)	
Coefficient of friction	Dynamic (vs. steel)	0.21		ASTM D 3702	5)	

Thermal properties	condition	value	unit	test method		comment
Vicat softening point		228	°F	ASTM D 1525	1)	(1) publicly sourced data (2) publicly sourced data - unannealed (3) publicly sourced data - unannealed (4) publicly sourced data (5) publicly sourced data
Deflection temperature	@ 66 psi	190	°F	ASTM D 648	2)	
Deflection temperature	@ 264 psi	170	°F	ASTM D 648	3)	
Service temperature	Long Term	170	°F	-	4)	
Thermal expansion (CLTE)		$3.4*10^{-5}$	in/in/°F	ASTM D 696	5)	

Other properties	condition	value	unit	test method		comment
Moisture absorption	@ 24 hrs, 73 °F	0.10	%	ASTM D 570		

- Resin specification:
  Ensinger Internal Specification
  Shapes specification:
  NONE

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