

## 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		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		test method	comment
Vicat softening point		228	°F	ASTM D 1525	1)
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 <sup>-5</sup>	in/in/°F	ASTM D 696	5)
Other properties	condition	value		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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