

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
Tensile strength at yield	@ 73 °F	10,000	psi	ASTM D 638	(2) publicly sourced data
Tensile strength at break	@ 73 °F	9,000	psi	ASTM D 638	(3) publicly sourced data
Elongation at yield (tensile test)	@ 73 °F	7	%	ASTM D 638	(4) publicly sourced data
Elongation at break (tensile test)	@ 73 °F	150	%	ASTM D 638	(5) publicly sourced data
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)	(1) publicly sourced data
Deflection temperature	190	°F	ASTM D 648	2)	(2) publicly sourced data - unannealed
Deflection temperature	170	°F	ASTM D 648	3)	(3) publicly sourced data - unannealed
Service temperature	Long Term	170	°F	-	(4) publicly sourced data
Thermal expansion (CLTE)	3.4×10^{-5}	in/in/°F	ASTM D 696	5)	(5) publicly sourced data

Other properties

condition

value

test method

comment

Moisture absorption	@ 24 hrs, 73 °F	0.10	%	ASTM D 570	
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→ Resin specification:

Ensinger Internal Specification

Shapes specification:

NONE

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