

## HYDEX® 301, 202 (Rigid Polyurethane)

HYDEX 301 and 202 are made from rigid polyurethane (RPU) resin, which was developed in the late 1980's by Dow Chemical Company, who now markets it under the trade name, Isoplast.

**HYDEX 301** is a clear grade of Isoplast. It combines excellent clarity (almost 90% light transmission) with broad range chemical

**HYDEX 202** is an opaque grade of Isoplast. It performs with superior impact and chemical resistance plus extraordinary mechanical properties.

Easily fabricated on standard machine shop equipment, they are typically used for:

- Factory maintenance replacement parts
- Short run OEM production parts
- Prototyping
- Thick section parts that are unsuitable for injection molding.

Rigid Polyurethane is a proven base material with these special properties:

- Broad Range Chemical Resistance
- Exceptional Clarity (Hydex 301)
- Good Temperature Resistance
- Nearly 90% Light Transmission (Hydex 301)
- Superior Practical Impact
- Excellent Mechanical Properties
- Easily Machined with Superior Dimensional Stability

Property	ASTM Test Method	Units	HYDEX 301	HYDEX 202
<b>Physical</b>				
Specific Gravity	D792		1.20	1.20
Water Absorption, 24 hrs @ 73 °F				
<b>Mechanical</b>				
Tensile Strength, Yield	D638	psi	10,000	9,000
Tensile Strength, Break	D638	psi	9,000	8,000
Tensile Elongation, Yield	D638	%	7	9
Tensile Elongation, Break	D638	%	140	80
Tensile Modulus	D638	psi	310,000	340,000
Flexural Strength	D790	psi	14,000	12,000
Flexural Modulus	D790	psi	340,000	280,000
Izod Impact, Notched, .125", 73 °F	D256	ft-lb/in	2.4	10
Izod Impact, Notched, .125", -40 °F	D256	ft-lb/in	0.8	3
Instrumental Dart Impact, Total Energy @ 73 °F	D3763	in-lb	800	400
Coefficient of Friction				
Resin Counter Surface				
Static			0.25	0.24
Dynamic			1.25	0.23
Stainless Steel Counter Surface				
Static			0.22	0.26
Dynamic			0.21	0.22
<b>Thermal</b>				
Deflection Temperature Under Load				
66 psi, Annealed		°F	220	290
264 psi, Annealed	D648	°F	170	280
66 psi, Unannealed		°F	190	260
264 psi, Unannealed		°F	170	240
Vicat Temperature	D1525	°F	228	292
Coefficient of Linear Thermal Expansion	D696	in/in/°F	3.4 x 10 <sup>-5</sup>	3.7 x 10 <sup>-5</sup>
<b>Optical</b>				
Light Transmission, .125"	D1003	%	90	NA

*NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.*