

HYDEX® 4101 PBT natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PBT (Polybutylene terephthalate)

Colour

white

Density

1.31 g/cm³

Main features

- resistant to cleaning agents
- very good chemical resistance
- good wear resistance
- good impact strength
- low moisture absorption

Target Industries

- food engineering
- food processing
- food technology
- engineering for beverage filling systems
- packaging and paper machinery
- semiconductor technology
- cleanroom technology
- conveyor technology
- pharmaceutical industry
- automotive industry

Mechanical properties

condition

value

test method

comment

Tensile strength	@ 73 °F	9,400	psi	ASTM D 638	
Modulus of elasticity (tensile test)	@ 73 °F	430,000	psi	ASTM D 638	
Elongation at yield (tensile test)	@ 73 °F	6	%	ASTM D 638	1)
Elongation at break (tensile test)	@ 73 °F	50	%	ASTM D 638	
Flexural strength	@ 73 °F	13,000	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	430,000	psi	ASTM D 790	
Compression strength	@ 73 °F, 1% strain	2,800	psi	ASTM D 695	
Compression strength	@ 73 °F, 10% strain	11,500	psi	ASTM D 695	
Compression modulus	@ 73 °F	315,000	psi	ASTM D 695	
Impact strength (Izod)		0.7	ft-lbs/in	ASTM D 256	
Rockwell hardness	M Scale	87		ASTM D 785	
Coefficient of friction	Static	0.19		-	2)
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.25		-	3)
Wear rate	@ 2000 PV	210*10 ⁻¹⁰	in ³ -min/ft-lbs-hr	-	4)

Thermal properties

condition

value

test method

comment

Deflection temperature	@ 264 psi	200	°F	ASTM D 648	
Deflection temperature	@ 66 psi	310	°F	ASTM D 648	1)
Service temperature	Long Term	221	°F	-	
Thermal expansion (CLTE)		6.1	*10 ⁻⁵ in/in/°F	-	2)

Other properties

condition

value

test method

comment

Limiting PV	@ 100 fpm	6,000	psi-fpm	-	1)
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTM D 570	
Flammability (UL94)		HB		-	2)

→ Resin specification:

ASTM D5927-09 TPES0111

Shapes specification:

ASTM D6261-10 S-TPES0111

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