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

Chemical Designation
PBT (Polybutylene terephthalate)

Colour
white

Density
1.31 g/cm^3

Main features
- resistent 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	unit	test method		comment
Tensile strength	@ 73 °F	9,400	psi	ASTM D 638		(1) Data obtained from public source (2) LNP EPALP-TB001 (3) LNP EPALP-TB001 (4) LNP EPALP-TB001
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	420,000	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)		0.6	ft-lbs/in	ASTM D 256		
Rockwell hardness	M Scale (R Scale)	95 (123)		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}	in³-min/ft-lbs-hr	-	4)	

Thermal properties	condition	value	unit	test method		comment
Glass transition temperature		338	°F	ASTM D 3418		(1) Data obtained from public source (2) Data obtained from public source
Melting temperature		442	°F	ASTM D 3418		
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	unit	test method		comment
Limiting PV	@ 100 fpm	6,000	psi-fpm	-	1)	(1) per LNP EPALP-TB003 (2) Data obtained from public source
Moisture absorption	@ 24 hrs, 73 °F	0.02	%	ASTM D 570		
Flammability (UL94)		HB		-	2)	

- Resin specification:
  ASTM D5927-14 TPES0113
  Shapes specification:
  ASTM D6261-14 S-TPES0111 w/ exception to Resin Type

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