

DELRIN 511 Series Acetal Homopolymer - Stock Shapes (rods, plates, tubes)

Chemical Designation

POM-H (Polyacetal (Homopolymer))

Colour

white

Density

1.42 g/cm³

Main features

- good machinability
- high stiffness
- high fatigue strength
- high creep resistance
- good wear properties
- very good abrasion resistance

Target Industries

- automotive industry
- food engineering
- construction industry
- conveyor technology
- mechanical engineering
- electronics
- fixture construction
- home appliances
- gear manufacturing

Mechanical properties

condition

value

test method

comment

Modulus of elasticity (tensile test)	450,000	psi	ASTM D 638	(1) public source data (2) publicly sourced data
Tensile strength at yield	10,000	psi	ASTM D 638	
Elongation at yield (tensile test) @ 73 °F	18	%	ASTM D 638	
Elongation at break (tensile test) @ 73 °F	25	%	ASTM D 638	
Flexural strength @ 73 °F	16,000	psi	ASTM D 790	
Modulus of elasticity (flexural test) @ 73 °F	520,000	psi	ASTM D 790	
Compression strength @ 73 °F, 1% strain	2,100	psi	ASTM D 695	
Compression strength @ 73 °F, 10% strain	16,500	psi	ASTM D 695	
Impact strength (Izod) @ 73 °F	1.25	ft-lbs/in	ASTM D 256	
Rockwell hardness @ 73 °F M Scale (R Scale)	95		ASTM D 785	
Coefficient of friction Static 40 psi	0.20	%	ASTM D 3702	1)
Coefficient of friction Dynamic 40 psi, 50 fpm	0.35		ASTM D 3702	2)
Wear rate 40 psi, 50 fpm	55*10 ⁻¹⁰	in ³ -min/ft-lbs-hr	ASTM D 3702	

Thermal properties

condition

value

test method

comment

Melting temperature	352	°F	DIN EN ISO 11357	1)
Deflection temperature @ 66 psi	325	°F	ISO-R 75 Method B	2)
Deflection temperature @ 264 psi	225	°F	ISO-R 75 Method A	3)
Service temperature Intermittent	300	°F	-	
Service temperature Long Term	185	°F	-	4)
Thermal expansion (CLTE)	6.8*10 ⁻⁵	in/in/°F	ASTM D 696	
Specific heat	0.35	BTU/lb-F°	-	

Electrical properties

condition

value

test method

comment

volume resistance	> 10 ¹⁵	Ω*cm	ASTM D257	
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Other properties

condition

value

test method

comment

Moisture absorption @ 24 hrs, 73 °F	0.20	%	ASTM D 570	
Moisture absorption @ saturation, 73 °F	.90	%	ASTM D 570	

→ Resin specification:

ASTM D6778 POM0113 (ASTM D4181 withdrawn 2005, Replaced by D6778)

Shapes specification:

ASTM D6100 S-POM0112

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