



MACH 1

Polymer Sheet

Physical Properties

Very High Molecular Weight Polyethylene (VHMW-PE) is a superior resin engineered to operate in demanding applications combining low co-efficient of friction, excellent abrasion resistance and high impact. Mach 1 VHMWPE has a molecular weight calculated at 1,000,000. Combined with its higher heat rating, Mach 1 engineered resin is designed for low friction, corrosion resistance, impact strength. Mach 1 retains key physical properties in a large range of temperatures and is highly resistant to chemical attack. This resin is UV protected for outdoor applications. FDA contact and non-contact uses are

TECHNICAL INFORMATION

Property	Method	Unit	Nominal Value*
Density	ASTM D-792	g/cm ³	0.929
Tensile strength	ASTM D-638	psi	5,600
Tensile modulus	ASTM D-638	psi	82,000
Elongation at break	ASTM D-638	%	450
Flexural modulus	ASTM D-790	psi	125,000
Flexural strength	ASTM D-790	psi	4,400
Izod impact, notched	ASTM D-4020	ft-lbs/in ²	no break
Compressive modulus	ASTM D-695	psi	80,000
Compressive strength (10% Def.)	ASTM D-695	psi	2,900
Hardness	ASTM D-2240	Shore D	66
Molecular Weight	ASTM D-6474	-	1,000,000
Coefficient of Friction - Dynamic	1018 Steel = 100	-	0.086
Coefficient of linear thermal expansion	ASTM D-696	in/in/°F	13 x 10 ⁻⁵
Heat deflection temperature, 66 psi	ASTM D-648	°F	169
Environmental Stress Crack Resistance	ASTM D-1693	100% Igepal	> 750 hrs
Volume resistivity	ASTM D-257	Ohm-cm	>10 ¹³
Surface resistivity	ASTM D-257	Ohm	>10 ¹³
Brittleness Temperature	ASTM D746	°F	< - 103
Vicat softening temperature	ASTM D-1525	°F	248
Max. operating / service temp (air)		°F	220
Water absorption 24hrs.	ASTM D-570	%	0.01

*All values are determined on specimens prepared according to ASTM 1248-84 "Standard Specifications for Polyethylene Plastic Molding and Extrusion Materials". Nominal values should NOT be interpreted as specifications.

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