

High Molecular Weight Polyethylene (HMWPE) is a higher molecular weight resin than standard HDPE. It is commonly utilized for thermoforming due to its resilient nature. HMWPE has many applications in higher wear applications due to its inherent molecular structure. It is also commonly utilized for thermoforming due to its resilient nature. Superior stress crack resistance is a key factor for choosing this material. HMWPE is ideal for heavy gauge sheet, abrasive sliding wear, and machined parts. FDA contact and non-contact uses are acceptable as this resin complies with FDA regulations.

TECHNICAL INFORMATION

Property	Method	Unit	Nominal Value*
Density	ASTM D-792	g/cm ³	0.949
Tensile strength at yield	ASTM D-638	psi	3,800
Tensile modulus	ASTM D-638	psi	178,500
Elongation at yield	ASTM D-638	%	n/a
Elongation at break	ASTM D-638	%	700%
Tensile impact	DIN 53448	ft-lbs/in ²	109
Flexural modulus	ASTM D-790	psi	165,000
Flexural strength	ASTM D-790	psi	4700
Izod impact	ASTM D-4020	ft-lbs/in ²	n/a
Compressive modulus	ASTM D-695	psi	n/a
Compressive deformation	ASTM D-621	% at 1000 psi	n/a
Hardness	ASTM D-2240	Shore D	67
Coefficient of linear thermal expansion	ASTM D-696	in/in/°F	5.0 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 ¹⁵
Surface resistivity	ASTM D-257	Ohm	>10 ¹⁵
Brittleness Temperature	ASTM D746	°F	< - 103
Vicat softening temperature	ASTM D-1525	°F	248
Max. operating temp.		°F	160
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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