

Lennite® Implant Grade UHMWPE-Properties



Lennite®

UHMWPE Sheet, Round and Rectangular Bar Stock

Applications Include:

Articular surfaces for all total joint replacement prostheses (hip, knee, shoulder, ankle, elbow, wrist, spinal disk)



Advantages of Medical Grade Lennite UHMWPE:

- Available in GUR 1020 and GUR 1050 resins
- Sheet, rectangular bar and round bar
- Lot controlled and traceable
- ASTM F-648 and ISO 5834 1 and 2 compliant
- Custom certifications available
- Available in ram extruded bar stock fully annealed in 1020 and 1050 resins
- Produced in the United States

Manufacturing Capabilities:

Compression Molded

Sheet:

- 1" to 4" thicknesses in 1/2" increments
- 24" x 48" sheet size

Extruded Bar

Rod:

- 1.0" to 4.0" diameter
- 60" and 120" lengths

Colors/Grades:

Standard: natural

ASTM F648-07				1020	1050
Property	ASTM	Units	Requirement	Result	Result
Density	D 792	kg/m ³	927-944	935	933
Tensile Strength					
@yield	D 638	MPa	21/19 min	22.4	21.2
@yield	D 638	psi	3050/2760 min	3250	3080
Ultimate Tensile Strength	D 638	MPa	40 min	49.4	49.8
Ultimate Tensile Strength	D 638	psi	5800 min	7160	7220
Ultimate Elongation	D 638	%	380/340 min	390	350
Izod Impact Strength	D 638	kJ/m ²	NB	NB	NB
Special Izod Impact Strength	F 648	kJ/m ²	126/73 min	185	109
Special Izod Impact Strength	F 648	ft-lbs/in ²	60/35 min	88	52
Deformation Under Load					
after 90 minute recovery	D621	%	2.0 max	0.7	0.7

European Standard ISO 5834-2:2006(E)				1020	1050
Property	ISO	Units	Requirement	Result	Result
Ash Content	3451/1	mg/kg	150 max	80	58
Tensile Strength					
@yield	527	MPa	21/19 min	23.2	21.4
@break	527	MPa	35/27 min	56.4	42.4
Elongation @break	527	%	300 min	420	330
Charpy Impact Strength	179	kJ/m ²	NB	NB	NB
Special Charpy Impact Strength	11542-2.3	kJ/m ²	180/90 min	>229 NB	109
Density	1183	kg/m ³	927-944	936	929

Property	Test	Units	1050 Result
Weight In Air	ISO1183 - 1:2004 Method A	gm	6.5185
Weight In Water	ISO1183 - 1:2004 Method A	gm	6.9809
Specific Gravity	ISO1183 - 1:2004 Method A	-	0.933
Density	ASTM D1505-03	gm/cm ³	0.931

Westlake Lennite®

Extruded and compression molded medical grade UHMWPE is produced in accordance with ASTM F-648 standards for use as an implant grade material and is ISO 5834-1 and ISO 5834-2 compliant for use in international markets.

Westlake compression molded sheets are formed under heat and pressure, and are slowly cooled to produce a very dimensionally stable, virtually stress-free sheet ideal for machining and fabrication. When machining close tolerance parts, a fabricator will experience very little material movement. Our proprietary process provides sheets with inherent stress levels that are extremely low or nonexistent in some cases than those typically found in the same materials that have been extruded and secondarily annealed.

Westlake production is performed under clean room conditions in accordance with FDA mandated GMPS. Our quality system is ISO 9001 certified.

Other Westlake Products For Medical Applications

POMALUX



acetal copolymer

ZELUXGS



polycarbonate

RADEL R5500



polyphenylsulfone

PROPYLUXIS



polypropylene

ZELUX Clear



polycarbonate

RADEL R5800



polyphenylsulfone

PROPYLUXIS2



polypropylene

LENNITE UHMWPE



implant grade

TEMPALUX



polyetherimide



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Lennite® Implant Grade for Medical Applications

