君华医疗
JUNHUA MEDICAL

AKSOPEEK® LCF

Medical Grade Implantable PEEK

AKSOPEEK

www.peekmedica.com

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Medical Grade Implantable PEEK

(Continuous Carbon Fiber-Reinforced PEEK Composite)

In China, our continuous carbon fiber-reinforced PEEK composites have been successfully applied in internal implants for fracture fixation and healing, demonstrating exceptional performance.

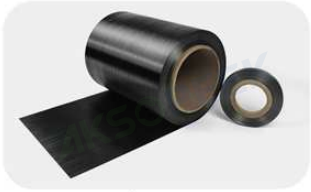
Compared to stainless steel and titanium alloys, AKSOPEEK® LCF's density closely matches human tissue, minimizing radiation attenuation during diagnostic imaging and radiotherapy. This ensures uninterrupted imaging clarity and precise radiation dosing for bone tumor patients, enhancing treatment accuracy.

▲ Continuous Carbon Fiber-Reinforced PEEK Composite Laminated Profiled Plate

Advantages of Carbon Fiber-Reinforced PEEK vs. Metal

items	AKSOPEEK® LCF Plate	Titanium Alloy Plat
Load Capacity (N)	1800	1800
Load Ratio	2450-73% (Ultimate)	3800-47% (Ultimate)
Fatigue Cycles	***1,000,000***	***60,000***

▲ Fatigue Test Data: Carbon Fiber PEEK vs. Titanium Alloy



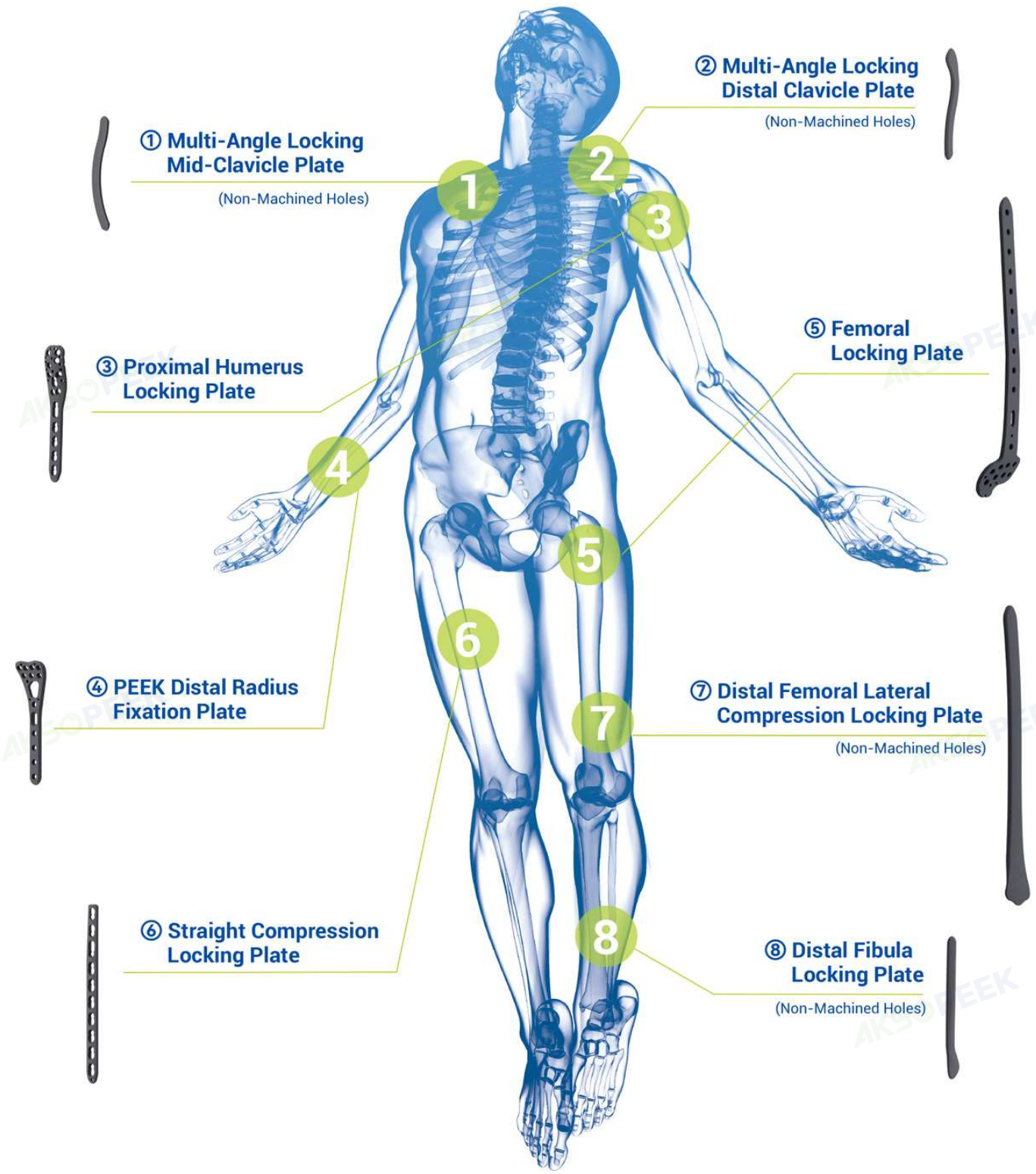
▲ AKSOPEEK® LCF Thermoplastic Composite Unidirectional Tape

▲ AKSOPEEK® LCF Bone Plate Product Showcase

▲ Transparent to X-rays without artifacts

- Adjustable Stiffness: Carbon fiber content and orientation can be tailored to meet diverse clinical needs.
- Superior Fatigue Resistance: Exceptional durability, reducing risk of plate fracture.
- Radiolucent: X-ray transparency ensures artifact-free imaging for accurate diagnosis.
- High Wear Resistance: Minimizes particle release, lowering inflammation and osteolysis risks.
- Elastic Modulus Matching: Carbon fiber PEEK' s modulus aligns with human bone, reducing stress shielding and promoting bone regeneration.
- Low Radiation Attenuation: In bone metastasis treatment, studies show carbon fiber PEEK screws exhibit <5% dose deviation, versus >30% for titanium screws.
- No Cold Welding: Enhanced stability during implantation, minimizing post-operative displacement risks.

AKSOPEEK® LCF Bone Plate Applications



Biocompatibility

Biological Report

Biocompatibility Test

Product Name	Standard	Test Item	Result
AKSOPEEK® LCF Medical Grade Implantable PEEK	ISO 10993- 3	Genetic Toxicity	Pass
		Ames Test	Pass
		In Vitro Mammalian Chromosomal Aberration	Pass
	ISO 10993- 4	Hemocompatibility	Pass
	ISO 10993- 5	Cytotoxicity	Pass
	ISO 10993- 6	Bone Implantation (26 Weeks)	Pass
		Muscle Implantation (26 Weeks)	Pass
	ISO 10993-10	Skin Sensitization	Pass
		Intracutaneous Reactivity	Pass
	ISO 10993-11	Pyrogenicity	Pass
		Acute Systemic Toxicity	Pass
		Subchronic Systemic Toxicity	Pass
	ISO 10993- 17	Toxicological Risk Assessment	Pass
	ISO 10993- 18	Chemical Characterization	Pass

AKSOPEEK®LCF-0/90° Performance Data

Property	Standard	Unit	Result
Color	--	--	Black
Glass Transition Temperature (T_g)	ISO 11357-2	℃	147
Crystallization temperature (T_c)	ISO 11357-3	℃	286
Melting temperature (T_m)	ISO 11357-3	℃	340
FTIR Spectrum	ASTM F2026	--	Pass
Carbon Fiber Content	ASTM D3171	%	66
Density	ASTM D792	kg/m^3	1580
Tensile Strength (Break)	ASTM D3039	MPa	880
Tensile Modulus	ASTM D3039	GPa	73
Flexural Strength	ASTM D7264	MPa	1400
Flexural Modulus	ASTM D7264	GPa	65
Compressive Strength	ASTM D6641	MPa	670
Compressive Modulus	ASTM D6641	GPa	60
Short-Beam Strength	ASTM D2344	MPa	90
In Vitro Cytotoxicity	ISO 10993-5	--	Pass

AKSOPEEK®LCF Product Specifications

No.	Product Name	Dimensions (L×W×T)
1	AKSOPEEK®LCF Distal Radius Plate	73.24*21.78*8.32mm
2	AKSOPEEK®LCF Distal Clavicle Plate (Left)	97.5*22.19*3.97mm
3	AKSOPEEK®LCF Mid-Clavicle Plate (Left)	109.1*22.82*3.48mm
4	AKSOPEEK®LCF Distal Fibula Plate (Left)	150.26*15.06*17.13mm
5	AKSOPEEK®LCF Distal Radius Plate (Right)	73.43*21.78*2.2mm

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Raw Material Testing Equipment

FTIR Spectrometer

FTIR is mainly used for material identification and has automatic recognition matching function, which can distinguish materials with different functional groups such as PEEK,PPS,PPSU,PI,etc.

Differential ScanningCalorimeter (DSC)

Differential scanning calorimetry is a technique that measures the energy difference (or power difference) per unit time between a substance and a reference substance as a function of temperature under programmed temperature control.

Universal Testing Machine

It is used to test general mechanical parameters such as tensile bending and modulus of products.

FD5000-P Pneumatic Fatigue Tester

Used to simulate and test the fatigue performance of materials or components under repeated pneumatic stress.

X-ray Foreign Body Detection Equipment

It is mainly used to detect whether there are defects such as internal metals,foreign objects,bubbles,cracks,etc.during the production process.

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