君华医疗
JUNHUA MEDICAL

PEEK Solutions For Medica

- Higher Quality Product
- Comprehensive Consideration to Customer
- Dedicated to Human Health

www.peekmedica.com

君华医疗
JUNHUA MEDICAL

Changzhou Junhua Medical Technology Co., Ltd.

Changzhou Junhua Medical Technology Co., Ltd. is a wholly-owned subsidiary of JiangSu JunHua HPP Co., Ltd. Since its establishment in 2019, it has always been focusing on the research, development, production and sales of medical polymer materials such as medical PEEK, PPSU, carbon fiber reinforced CF/PEEK thermoplastic composites and implantable grade PEEK materials. The company has 1200 square meters of class 10,000 and class 100,000 clean workshop, and passed ISO13485 quality management system, with granulation modification, injection molding, CNC machining, extrusion and OEM capability.

With 18 years of deep plowing in the field of PEEK medical application, the company has successfully developed AKSOPEEK® series of medical implant materials, which meets the standards of YY/T0660-2008 and ASTM F2026, and has passed the filing of the State Pharmaceutical Administration, and has obtained the certificate of registration of three types of implants.

With the mission of "creating maximum value for customers", Junhua Medical is willing to use its rich development experience to assist customers in the whole process from product design, material selection, process, protype to mass production.

18 Years
Experience in application and development of PEEK and other polymer

5000 m^2
Standardized Plant

10000 level
Injection Molding Clean Room

CONTENTS

Development History

2007

Registered and established Changzhou Junhua Special Plastic Co., Ltd., and entered Jiangsu Yangtze River Delta Mold City

2012

The first domestic PEEK product enterprise standard was set and passed the record.

2013

Entered the medical profession through trauson.

trauson

2014

First in China to develop medical PEEK extrusion.

2015

Started the PEEK polymerization pilot plant.

2018

Established Shandong Junhao High Performance Polymer Co., Ltd in cooperation with Jilin University; In the same year, the project development of implanted PEEK was developed.

2019

Changzhou Junhua Medical Technology Co., Ltd. was established as a wholly-owned subsidiary; in December, two new products of the company, implantable PEEK materials and continuous carbon fiber reinforced PEEK composites, were recognized as "Innovative Products Made in Changzhou".

2021

AKSOPEEK®, the new-generation medical implant-grade material brand trademark was officially released; participated in the formulation of national standards for polyether ether ketone (PEEK) resins; raised 60 million dollars in the first round of financing, and initiated the IPO standardized listing work.

2022

Changzhou Junhua Medical was stationed in ITRI and opened a new factory; it was awarded the titles of "Small Giant" enterprise with national specialization, "Jiangsu Provincial Enterprise Technology Center", "Jiangsu Industrial Design Center", and so on. Jiangsu Provincial Industrial Design Center".

2023

The new plant passed the 13485 system establishment; AKSOPEEK® master file was approved; AKSOPEEK® officially entered into Class III registration.

2024

In May, AKSOPEEK® issued the first Class III registration certificate in China.

PI Tube

PEEK Medical Catheter

Medical PEEK catheters are both tough and rigid and are widely used for minimally invasive treatments. Such as radiofrequency ablation catheters, puncture catheters and so on.

CF/PEEK

Continuous carbon fiber CF/PEEK thermoplastic composites. It has the advantages of light weight, high strength, light transmittance, high temperature sterilization and dimensional stability. Mainly used in orthopedic targeting instruments.

Femoral Nail Targeting Instruments

Surgical Robot Positioning Frame

Implant Grade PEEK

Implantable grade PEEK has a modulus of elasticity and density very close to that of human bone, and has good biocompatibility. It is used to fabricate intertapered fusions for implantation into the human body, and is also used in a large number of applications in sports medicine and dentistry, as well as in craniofacial restoration.

Medical Grade PEEK

Medical grade PEEK is available in a wide range of colors and complies with FDA and 10993 standards. It is currently widely used in dental and orthopedic instruments, and positioning target frames for medical surgical robots.

PEEK Resin

Intramedullary Nail Targeting Instruments

PEEK Fixator for Tibia and Ankle

PEEK single-arm external fixation bracket is injection molded with 30% carbon fiber reinforced PEEK, which is lightweight and translucent. Injection molding is suitable for mass production.

Radius External Fixator

PEEK translucent radial external fixation bracket with injection-molded body made of PEEK5600CF30 and metal X-ray translucent clamping block for lighter weight.

PEEK Needle Bar Clamp Type Fixator

PEEK needle bar clamps can be injection molded with 30% glass fiber or carbon fiber reinforced PEEK, glass fiber. Enhanced color adjustable, short production cycle, low cost, colorful.

PEEK5600CF30

30% carbon fiber reinforced PEEK, has excellent dimensional stability, but the dimensional stability after sterilization is slightly lower than that of CF/PEEK, recommended for processing some proximal aiming, injection molding can be achieved, suitable for mass production.

PPSU Battery Box

PPSU Knee Joint Trial Prosthesis

PPSU Pull Tab

PPSU Replaces Titanium Alloy in Spine Surgery to Create Passageways.

PPSU Handle

PPSU

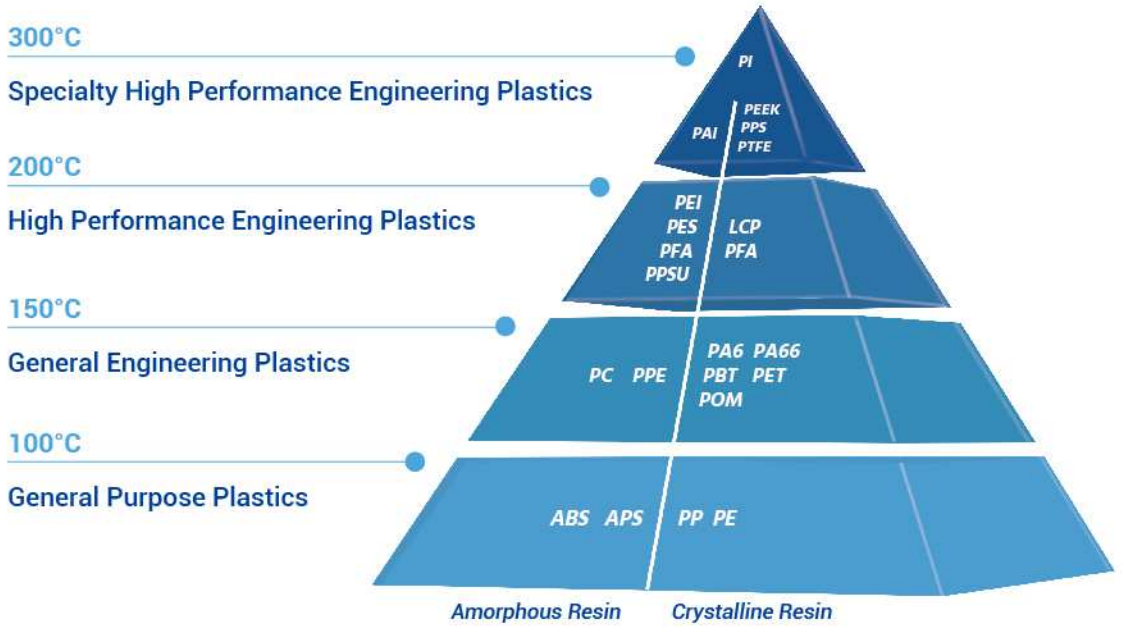
PPSU has good temperature resistance and can be sterilized repeatedly. Available in a variety of colors and meets FDA and 10993 requirements.It is now widely used for processing PPSU instrument case covers, orthopedic instrument test pads, and instrument handles.

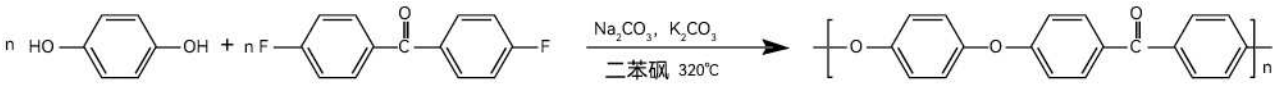
PPSU Heteroype Rod

PEEK Granules

Introduction of PEEK

Plastic Classification





Introduction to PEEK (Polyetheretherketone)

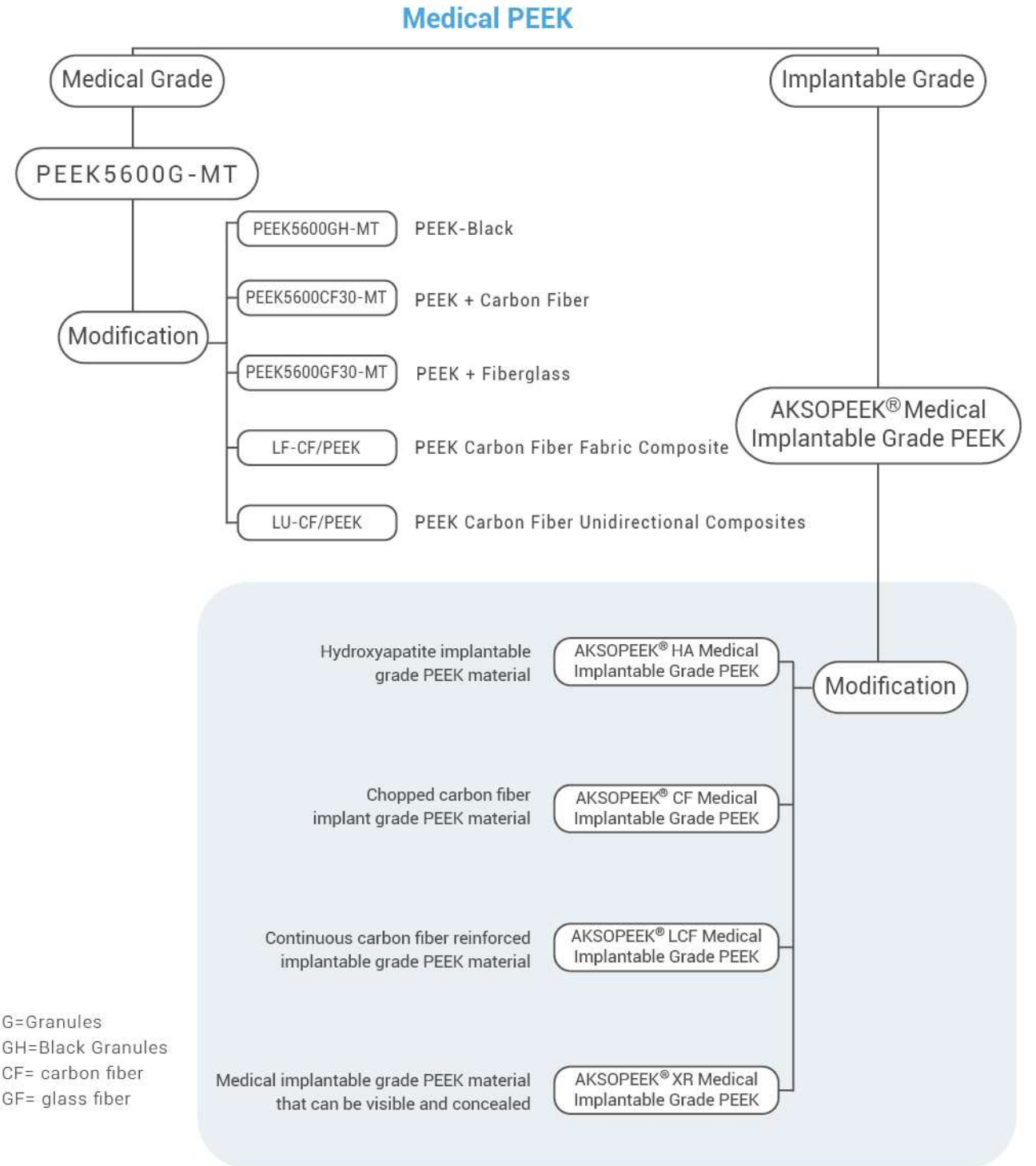
Polyetheretherketone (referred to as PEEK) is the main chain of the molecule contains links in the linear aromatic polymer compounds. Its constituent unit is oxygen-p-phenylene-oxygen-carbonyl-p-phenylene, semi-crystalline, thermoplastic polymer.

Authoritative Organization Testing and Certification

Biocompatibility Testing

Testing Items	Testing Standard	Medical Grade PEEK	AKSOPEEK® Medical Grade Implantable Materials
Genotoxicity Test	ISO 10993-3		√
Ames Test			√
Chromosomal Aberration Assay in Mammalian Cells in Vitro			√
Hemocompatibility	ISO 10993-4	√	√
Cytotoxicity Testing	ISO 10993-5	√	√
Bone Implantation Test (26 Weeks)	ISO 10993-6		√
Muscle Implantation (26 Weeks)			√
Skin Sensitization Test	ISO 10993-10	√	√
Intradermal Reactivity Test		√	√
Pyrogen Test	ISO 10993-11	√	√
Acute Systemic Toxicity Test		√	√
Subchronic Systemic Toxicity Test			√
Toxicology	ISO 10993-17		√
Chemical Characterization	ISO 10993-18		√

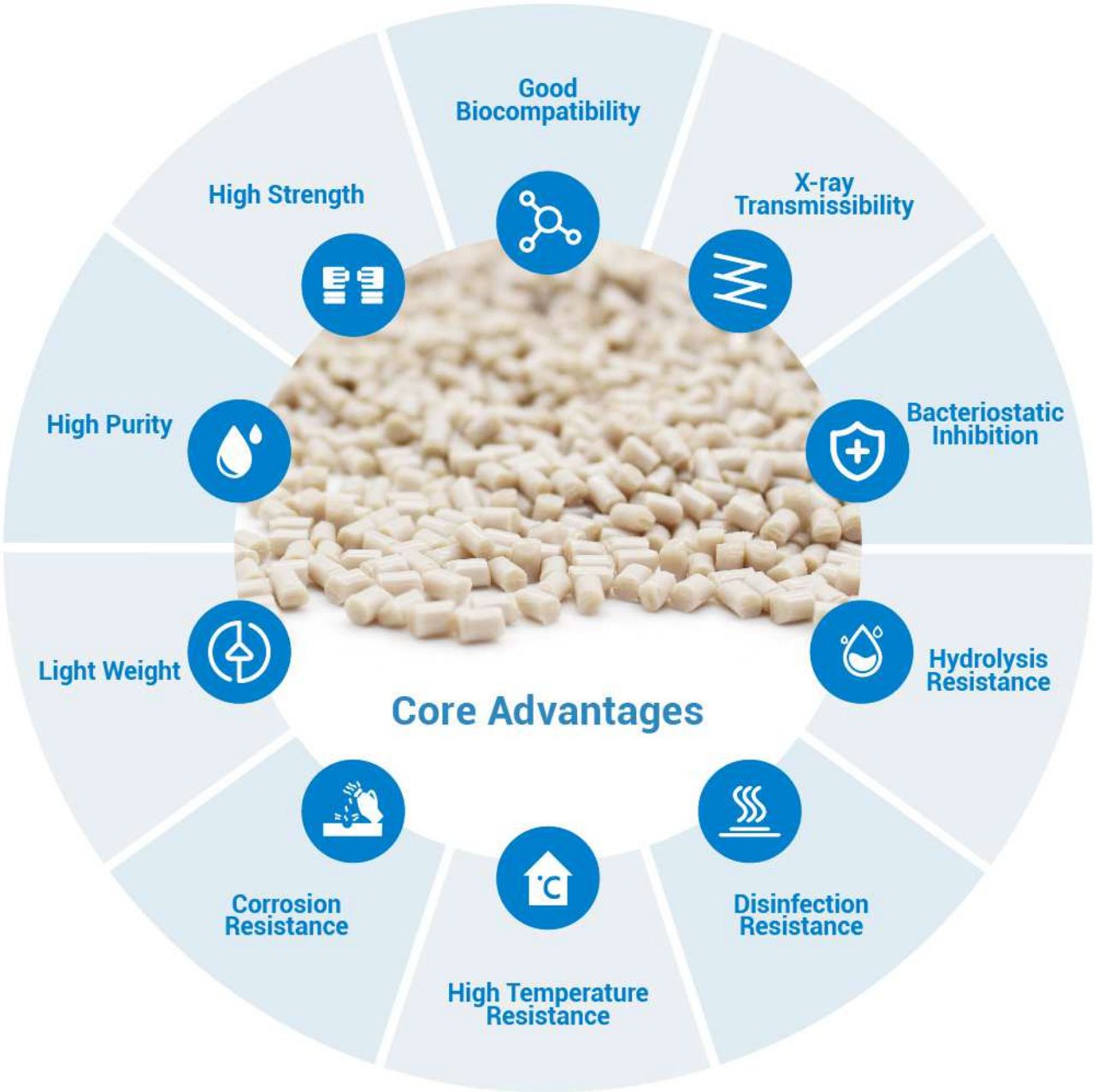
PEEK Resin Product Number



G=Granules
GH=Black Granules
CF= carbon fiber
GF= glass fiber

Features Advantages

PEEK's Excellent Properties as a Medical Grade High Performance Plastic



Self-Developed Brand - Medical Grade implantable PEEK

AKSOPEEK®

Changzhou Junhua Medical Technology Co., Ltd. has independently developed the AKSOPEEK® series of implant-grade PEEK materials, which have successfully passed YY/T0660-2008 and ASTM F2026, and obtained third-party verification reports.

The Series includes the Following Grades:

AKSOPEEK®: Implant-grade PEEK material,

AKSOPEEK HA: Implant-grade PEEK material with hydroxyapatite,

AKSOPEEK® CF: Implant-grade PEEK material reinforced with short carbon fibers,

AKSOPEEK® LCF: Implant-grade PEEK material reinforced with continuous carbon fibers,

AKSOPEEK® XR: Radiopaque implant-grade PEEK material.

AKSOPEEK® Products for the Medical Industry

PEEK Cranial Repair

Available Material Grades
AKSOPEEK®
AKSOPEEK®HA

PEEK Implants for Maxillofacial Reconstruction

Available Material Grades
AKSOPEEK®

PEEK Sternal Band

Available Material Grades
AKSOPEEK®

PEEK Dental Bridges and Crowns

Available Material Grades
AKSOPEEK®

PEEK Suture Anchor

Available Material Grades
AKSOPEEK®

PEEK Intervertebral Fusion Cage

Available Material Grades
AKSOPEEK®
AKSOPEEK®HA
AKSOPEEK®XR

PEEK Heart Valve Frame

Available Material Grades
AKSOPEEK®
AKSOPEEK®XR

PEEK Knee Joint Condyle

Available Material Grades
AKSOPEEK®

PEEK Bone Plate

Available Material Grades
AKSOPEEK®LCF

AKSOPEEK® SLS Fine Powder

SLS PEEK fines are spheroidized to ensure that they are suitable for selective laser sintering (SLS) process. The shape and size of the particles are optimized for good flowability and homogeneity, resulting in uniform spreading and efficient sintering during the printing process, which ensures consistent product performance.

Good Biocompatibility

X-ray Transmissibility

Bacteriostatic Inhibition

Properties

Performance	Unit	Numerical Value
Particle Size	Mesh	400
Tensile Strength	MPa	86.5 ± 3.3
Elongation	%	2.1 ± 0.2
Bending Strength	MPa	161.9 ± 23.7
SLS Sintering Selected Melt Finger Range	g/10 min	30-50

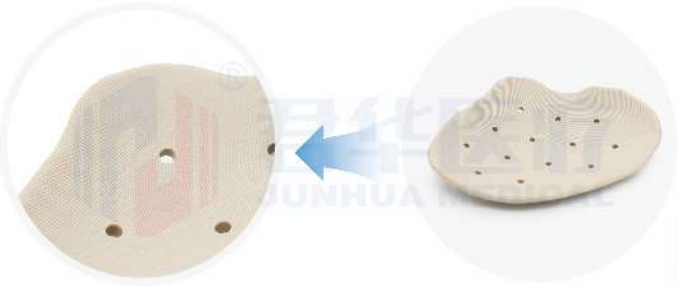
AKSOPEEK® 3D Printing Filament

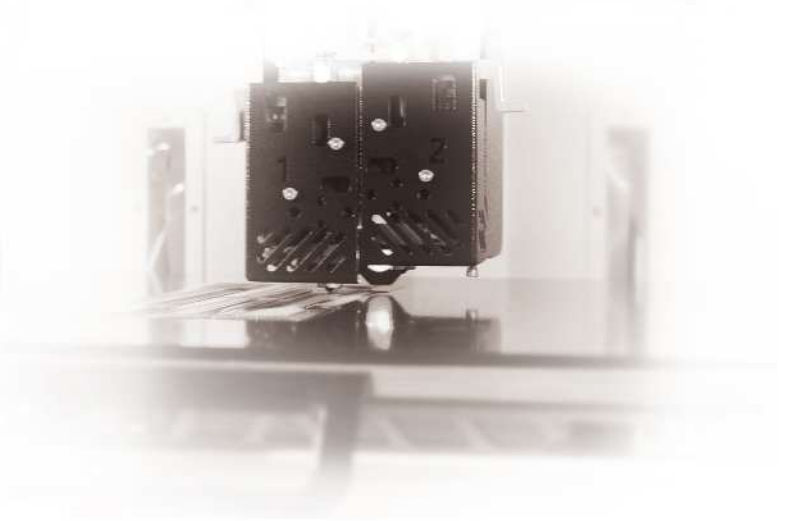
φ1.75mm

- It helps 3D printers keep processing stable and avoid warping.
- Implant structures can be designed and customized according to patients' need.
- Resistant to X-ray radiation.
- Excellent wave-transparent properties compared to metals.

Properties

Mechanical Property	Unit	Test Methods	Numerical Value (XY direction) After Heat Treatment (200°C/4 hrs)	Numerical value (Z-direction) After Heat Treatment (200°C/4 hrs)
Tensile Modulus	MPa	ISO 527	2700	2590
Yield Stress	MPa	ISO 527	72	/
Yield Elongation	%	ISO 527	6	/
Rupture Stress	MPa	ISO 527	63	51
Elongation at Break	%	ISO 527	13	/
Bending Modulus	MPa	ISO 178	2590	2480
Impact Strength of Simply Supported Beams	kJ/m^2	ISO 179	No Break	/





AKSOPEEK® dental disc

PEEK disc comes in four colors:
White, brown, yellow, gum color

Elastic Modulu Similar to Homan Bones

Good Biocompatibility

X-ray Transmissibility

Bacteriostatic Inhibition

PEEK disk Application

Partial Denture

The elastic modulus similar to that of human bone can improve the comfort of patients' oral tissuese.

Implant

PEEK implants are not easily broken and can reduce stress shieding,which is beneficial for cortical bone growth and deposition.

Dental Crown

Non allergenicity can effectively prevent allergic reactions in patients.

Dental Bridge

Appropriate hardness not only does not damage the original teeth, but also has strong wear resistance. In addition,sufficient toughness can better protect damaged ones tooth.

Comparison of disk Performance Indicators

	Density (g/cm³)	Bending Strength (MPa)	Bending Modulus (GPa)	Gap Impact Strength (KJ/m²)
Natural color disc AKSOPEEK®	1.31	163	3.5	5.3
White color disc AKSOPEEK® WT	1.51	170	4.9	5.8
Yellow color disc AKSOPEEK® PY	1.51	170	4.9	5.8
Gum color disc AKSOPEEK® RD	1.35	165	4.4	5.5

Disk Specifications Model Table

OD 98 Series	OD 95 Series	Square Plate Series	
Φ 98*10	Φ 95*10	140*150*10	140*220*10
Φ 98*12	Φ 95*12	140*150*12	140*220*12
Φ 98*14	Φ 95*14	140*150*14	140*220*14
Φ 98*16	Φ 95*16	140*150*16	140*220*16
Φ 98*18	Φ 95*18	140*150*18	140*220*18

OD 98 Series	OD 95 Series	Square Plate Series	
Φ 98*20	Φ 95*20	140*150*20	140*220*20
Φ 98*22	Φ 95*22	140*150*22	140*220*22
Φ 98*24	Φ 95*24	140*150*24	140*220*24
Φ 98*25	Φ 95*25	140*150*25	140*220*25
Φ 98*26	Φ 95*26	140*150*26	140*220*26

Round Disc

Square Disc

U Shaped

AKSOPEEK® Property List

Performances	Reference Standard	Unit	AKSOPEEK®	AKSOPEEK®HA	AKSOPEEK®CF	AKSOPEEK®XR
Color	--	--	Khaki	Khaki	BLACK	Khaki
Carbon Fiber Content	ASTM D3171	%	--	--	30	--
Glass Transition Temperature Tg	ISO 11357-2	℃	147	146	147	148
Crystallization Temperature Tc	ISO 11357-3	℃	286	287	286	289
Melting Point Tm	ISO 11357-3	℃	340	342	340	339
Infrared Spectrum	YY/T 0660	--	Pass	--	--	--
Infrared spectrum	ASTM F2026	--	Pass	Pass	Pass	Pass
Total Heavy Metals as Lead, Max/%	YY/T 0660	%	< 0.001	--	--	--
Heavy Metal ions (Ag.As,Bi,Cd,Cu,) Hg, Mo, Pb, Sb and Sn)Max	ASTM F2026	ppm	5.8	18.3	22.4	20.7
Density	ISO 1183	kg/m³	1308	1450	1410	1503
Tensile Strength (yield)	ISO 527	MPa	101	94	--	102
Tensile Strength (at break)	ISO 527	MPa	73	73	224	100
Elongation at Break	ISO 527	%	15	9	2.8	14
Bending Strength	ISO 178	MPa	166	166	327	155
Bending Modulus	ISO 178	GPa	4	4.3	19	4.3
Notched Impact Strength	ISO 180	kJ/m²	5.2	4.1	8.3	6.4
In Vitro Cytotoxicity	ISO 10993-5	--	Pass	Pass	Pass	Pass

* Remarks: The values in the table are characteristic values and cannot be used as acceptance criteria.

Performances	Reference Standard	Unit	AKSOPEEK®LCF
Color	--	--	Black
Glass Transition Temperature Tg	ISO 11357-2	℃	147
Crystallization Temperature Tc	ISO 11357-3	℃	286
Melting Point Tm	ISO 11357-3	℃	340
Infrared Spectrum	ASTM F2026	--	Pass
Carbon Fiber Content	ASTM D3171	%	66
Intensity	ASTM D792	kg/m³	1580
Tensile Strength (at break)	ASTM D3039	MPa	880
Tensile Modulus	ASTM D3039	GPa	73
Bending Strength	ASTM D7264	MPa	1400
Bending Modulus	ASTM D7264	GPa	65
Compressive Strength	ASTM D6641	MPa	670
Modulus of Compression	ASTM D6641	GPa	60
Short Beam Strength	ASTM D2344	MPa	100
In Vitro Cytotoxicity	ISO 10993-5	--	Pass

Medical Grade PEEK Materials

Medical grade PEEK has more stringent biocompatibility and biosafety requirements than ordinary PEEK and meets the strict standards and regulations for medical devices. It undergoes more stringent production control and quality testing to ensure its stability and reliability in biological environments, and is suitable for applications such as orthopedic devices and minimally invasive interventions.

- High Purity
- Good Biocompatibility
- Corrosion Resistance
- High Cleanliness

Surgical Robot

Material Grade: PEEK5600G-MT

PEEK Medical Catheters

Widely used in interventional and minimally invasive surgical instruments

★ The thinnest wall thickness can be controlled at 0.05mm.

Material Grade: PEEK5600G-MT/PEEK5600GH-MT/PEEK5600GB-MT

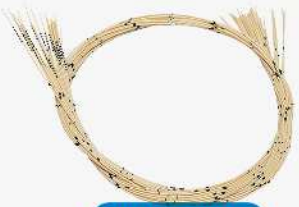
PEEK medical catheter has excellent toughness, rigidity and fatigue resistance, 0.2mm on one side up to 5KV insulation strength, and at 160 ℃ below the long-term mechanical properties, dimensional stability and chemical resistance. It is also impact resistant, flame retardant, and retains its insulating strength in humid environments or at high temperatures, making it suitable for a variety of sterilization methods.

Our PEEK catheters are widely used in cardiovascular and cerebrovascular interventional and minimally invasive surgical instruments, including intravenous and cardiac radiofrequency ablation catheters, laparoscopic surgical instruments, endoscopes and so on.

Customized Post-processing

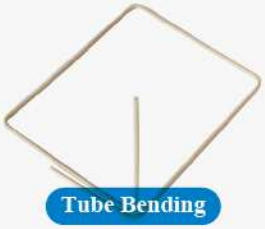
Professional customized PEEK medical catheters, capillary tubes, multi-lumen tubes to meet diversified needs; Advanced ring printing technology to ensure that the ribbon is flush, the writing is clear, and the medical-grade ink does not come off; Provide non-standard flanging tools, medical punching equipment to ensure high precision and automatic chip removal; Customized molds for precise thermal fusion, bending smooth and wrinkle-free.

End Forming



Tube Printing

Punching and Flanging



Tube Bending

PEEK Mechanical Properties and other Performance Test Data

Mechanical Property	Test Standard	Test Value
Tensile Strength(23℃)MPa	ISO527	95
Bending Strength(23℃)MPa	ISO 178	155
Flexural Modulus(23℃)GPa	ISO 178	3.5
Impact Strength of Simply Supported Beams (unnotched) kJ/m²	ISO 179/IU	No Break

Electrical Property	Test Standard	Test Value
Dielectric Strength (2mm) kV/mm	IEC 60243-1	20
Dielectric constant	IEC 62631	3.0
Surface Resistance Ω	GB/T31838.3	10^{15}
Volume Resistivity Ω	IEC 62631	10^{15}

Thermal Performance	Test Standard	Test Value
Melting Point ℃	ISO 11357	343
Heat Deflection Temperature ℃	ISO 75A-f	152
Continuous use Temperature ℃	UL 746B	260
Coefficient of Thermal Expansion ppm K⁻¹	ISO 11359-2	45
Easy Heat Coefficient W/(m-K)	ISO /CD22007-4	0.29

Other Properties	Test Standard	Test Value
Density g/cm³	ISO 1183	1.3±0.02
Rockwell Hardness HRR	GB/T 3398.2	118
Coefficient of Friction	ASTM D3702	0.30-0.38
Water Absorption(23℃,24Hrs)%	ISO 62-1	0.07
Molding Shrinkage	Parallel to the direction of flow	1.2

PEEK Medical Catheter Tubing Specifications

NO.	OD	ID
1	Φ0.5	Φ0.3 Φ0.4
2	Φ0.8	Φ0.3 Φ0.4 Φ0.5 Φ0.6
3	Φ1.0	Φ0.4 Φ0.6 Φ0.8 Φ0.9
4	Φ1.2	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1
5	Φ1.4	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2
6	Φ1.5	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3
7	Φ1.6	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5
8	Φ1.8	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.5 Φ1.6 Φ1.7
9	Φ2.0	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.7 Φ1.8
10	Φ2.2	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.1
11	Φ2.4	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3
12	Φ2.6	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.2 Φ2.4 Φ2.5
13	Φ2.8	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3 Φ2.5 Φ2.7
14	Φ3.0	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.2 Φ2.4 Φ2.6 Φ2.8 Φ2.9
15	Φ3.2	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3 Φ2.5 Φ2.7 Φ2.9 Φ3.0
16	Φ4.95	Φ4.15 Φ4.25 Φ4.35 Φ4.55
17	Φ10	Φ8.7
18	Φ12	Φ10 Φ11
19	1/32	Φ0.25 Φ0.5
20	1/16	Φ0.1 Φ0.13 Φ0.25 Φ0.38 Φ0.5 Φ0.75 Φ1.0 Φ1.2
21	1/18	Φ0.5 Φ0.75 Φ1.0 Φ1.2 Φ2.0 Φ2.2

PEEK medical catheters are available in a wide range of specifications, always in stock, and can be customized according to specific needs.

Thermoplastic PI Tubes

Multifunctional polymers offer a wide range of desirable properties

★ Can be used for a long time in an environment of up to 300℃

PI Medical Catheter Features Benefits

- Good dimensional stability, accuracy can be stabilized at ±0.02mm.
- Good temperature resistance and adiabatic properties, long time 250℃.
- Good insulation, dielectric strength not less than 300kv/mm.
- Good chemical resistance, tolerance to most reagents except strong acid and base solutions.
- Good sterilizability, resistant to ethylene oxide, high temperature high Pressure, irradiation and other sterilization
- Strong bondability, the material surface treatment can be with the metal Excellent bonding strength to other materials.

PI Performance Test Data

Mechanical Property	Test Standard	Unit	JUNHUA®PI-MT
Density	ISO 1183	g/cm³	1.32
Tensile Strength	ISO 527	MPa	95
Elongation at Break	ISO 527	%	40
Bending Strength	ISO 178	MPa	138
Dielectric Strength (2mm)	IEC 60243-1	KV/mm	25
Heat Distortion Temperature	ISO 75-1/-2	℃	230
Continuous use Temperature	UL746B	℃	250

PI Medical Catheter Tubing Specifications

NO.	OD	ID
1	Φ0.5	Φ0.3 Φ0.4
2	Φ0.8	Φ0.3 Φ0.4 Φ0.5 Φ0.6
3	Φ1.0	Φ0.4 Φ0.6 Φ0.8 Φ0.9
4	Φ1.2	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1
5	Φ1.4	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2
6	Φ1.5	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3
7	Φ1.6	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5
8	Φ1.8	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.5 Φ1.6 Φ1.7
9	Φ2.0	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.7 Φ1.8
10	Φ2.2	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.1
11	Φ2.4	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3
12	Φ2.6	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.2 Φ2.4 Φ2.5
13	Φ2.8	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3 Φ2.5 Φ2.7
14	Φ3.0	Φ0.4 Φ0.6 Φ0.8 Φ1.0 Φ1.2 Φ1.4 Φ1.6 Φ1.8 Φ2.0 Φ2.2 Φ2.4 Φ2.6 Φ2.8 Φ2.9
15	Φ3.2	Φ0.3 Φ0.5 Φ0.7 Φ0.9 Φ1.1 Φ1.3 Φ1.5 Φ1.7 Φ1.9 Φ2.1 Φ2.3 Φ2.5 Φ2.7 Φ2.9 Φ3.0
16	Φ4.95	Φ4.15 Φ4.25 Φ4.35 Φ4.55
17	Φ10	Φ8.7
18	Φ12	Φ10 Φ11
19	1/32	Φ0.25 Φ0.5
20	1/16	Φ0.1 Φ0.13 Φ0.25 Φ0.38 Φ0.5 Φ0.75 Φ1.0 Φ1.2
21	1/18	Φ0.5 Φ0.75 Φ1.0 Φ1.2 Φ2.0 Φ2.2

PI medical catheters are available in a wide range of specifications, always in stock, and can be customized according to specific needs.

PEEK5600CF30 Carbon Fiber Composites

PEEK 5600G+30% Carbon Fiber Staple Composite combines the advantages of PEEK and carbon fibers to significantly improve temperature resistance and mechanical properties, while maintaining the injection molding properties of PEEK for a wide range of applications in the medical industry.

X-ray Transmissibility | High Strength | High Temperature Resistance | Light Weight

Trauma/External Fixation Bracket

Material Grade: PEEK5600CF30-MT

Single-arm External Fixation Bracket

Injection-molded PFNA

Humerus Intramedullary Nail Targeting Device

Typical Performance Table

Performances	Reference Standard	Unit	PEEK5600CF30-MT
Carbon Fiber Content	--	--	30%
Tensile Strength	ISO 527	MPa	230
Tensile Modulus	ISO 527	GPa	23
Elongation at Break	ISO 527	%	2.0
Bending Strength	ISO 178	MPa	320
Bending Modulus	ISO 178	GPa	21
Notched Impact Strength	ISO 180	KJ/m^2	8.8
Heat Distortion Temperature	ISO 75A-f	℃	315
Coefficient of Thermal Expansion	ISO 11359-2	ppm K^{-1}	15
Thermal Conductivity	ISO /CD22007-4	W/ (m·K)	0.95
Water Absorption 24 hours	ISO 62-1	%	0.04
Density	ISO 1183	g/cm^3	1.4±0.02

* This is the injection molding performance parameters. If necessary, please call our technical department for more detailed technical indicators!

Continuous Carbon Fiber Reinforced PEEK Thermoplastic Composites

Composite of PEEK and continuous carbon fiber, widely used in the medical industry. Good X-ray transmittance, density is 1/4 of stainless steel, strong impact resistance, dimensional stability, high temperature resistance, size error after 100 times sterilization ≤ 0.02mm.

X-ray Transmissibility | Corrosion Resistance | High Temperature Resistance | Light Weight

Typical Performance Table

Performances	Reference Standard	Unit	Unidirectional Prepreg 0°	Unidirectional Prepreg 0°/90°	bi-directional woven prepreg laminate
Carbon fiber mass content	ASTM D3529	%	66	66	60
Density	ASTM D792	g/cm³	1.58	1.58	1.55
Durometer	ASTM D785	HRE	105	104	102
Tensile Strength	ASTM D3039	MPa	2200	880	700
Tensile Modulus	ASTM D3039	GPa	130	73	70
Bending Strength	ASTM D7264	MPa	2000	1400	900
Bending Modulus	ASTM D7264	GPa	116	65	73
Compressive Strength	ASTM D6641	MPa	1200	670	630
Modulus of Compression	ASTM D6641	GPa	120	60	56
Heat Distortion Temperature	ASTM D648	℃	332	332	332
Compression Strength after Impact	ASTM D7137	MPa	220	225	230
Type I Interlaminar Fracture Toughness	ASTM D5528	J/m²	1400	1410	1430
Short Beam Strength	ASTM D2344	MPa	110	100	80
In-plane Shear Strength	ASTM D3518	MPa	140	140	145
In-plane Shear Modulus	ASTM D3518	GPa	4.5	4.5	4.5

Orthopedic

Material Grade: LF-CF/PEEK

Intertan Femoral Surgical Instruments

Femoral SupracondylarNail Targeting

Proximal Humerus Nail Targeting

PPSU Sheet, Bar, Pipe and Shaped Parts

PPSU is an amorphous, high-performance thermoplastic with better impact and chemical resistance than PSU and PEI. PPSU's hydrolysis resistance has been shown to be superior to other amorphous thermoplastics in autoclave failure tests and is suitable for medical devices because of its ability to withstand unlimited steam sterilization.

Electrical insulation

Good Biocompatibility

Dimensional Stability

Hydrolysis Resistance

PPSU Color and Color Code

Color	Black	Natural	Light Blue	Dark Blue	Green	Yellow	Gray	Red	White
Code	BL001	N000	BB09	DB0099	GR350	Y159	GG6126	R8040	W002
									

Color code suitable for product type: round bar, profiled bar, thick plate and machined parts (non-injection molded parts)

PPSU Physical Properties and Applications

Typical values for uncolored products, at 23°C		Test Method	Unit	Typical Values
Mechanical Property				
Tensile Strength		ISO 527	MPa	70
Tensile Modulus		ISO 527	MPa	2270
Yield Elongation		ISO 527	%	7.8
Bending Strength		ISO 178	MPa	105
Bending Modulus		ISO 178	MPa	2400
Lzod Notched Impact Strength		ISO 180/A	KJ/m²	9.8
Thermal Performance				
Heat Distortion Temperature		ISO 75 -2	℃	196
Glass Transition Temperature		ISO 11357 -2	℃	220
Coefficient of Linear Expansion		ISO 11359 -2	E⁻⁶/K	55
Flame Retardant Thickness 1.5mm		UL94	Class	V-0
Electrical Property				
Bulk Resistivity		IEC 60093	Ω.m	>1E13
Surface Resistivity		IEC 60093	Ω	>1E15
Relative Permittivity	@100HZ	IEC 60250		3.8
	@1MHZ	IEC 60250		3.7
Dielectric Loss Factor	@100HZ	IEC 60250	E⁻⁴	15
	@1MHZ	IEC 60250	E⁻⁴	86
Dielectric Strength 2mm		IEC 60243-1	KV/mm	15
General and Processing Properties				
Density		ISO1183	g/cm3	1.29
Saturated Water Absorption @23℃150% Analysis to Humidity		ISO62	%	0.6
Molding Shrinkage (parallel)		ISO 2577,294-4		0.9
Molding Shrinkage (vertical)		ISO 2577,294-4		1
Melt Index		ISO 1133	g/10min	28-38
Melt Temperature Range, Injection/Extrusion Molding			℃	290-320
Mold Temperature Range, Injection/Extrusion Molding			℃	140-180

PPSU Battery Box

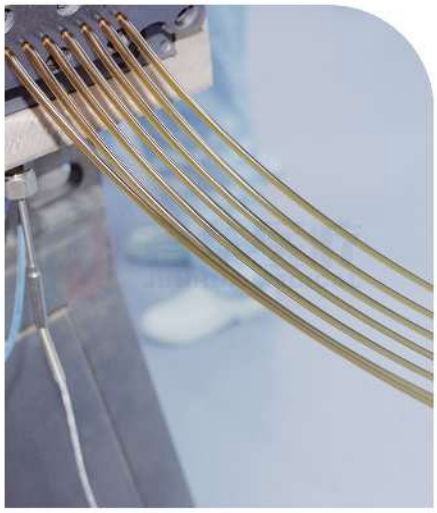
PPSU Pull Tab

PPSU Knee Joint Trial Prosthesis

PPSU Handle

Core Strengths & Process Capabilities

Medical Grade Modified Pelletizing Equipment



Medical grade modified pelletizing equipment is used to process medical grade plastic raw materials into uniform and stable.The production equipment of granular materials. The modified pelletizing process usually includes the mixing of plastics,Melting,extruding, cooling, cutting and other steps, and finally get in line with the medical industry standards of the High performance particles.

Medical Grade Profile Extrusion Equipment

Precision extrusion into profile products that meet medical industry standards, ensuring high purity, precise dimensions and excellent mechanical properties; And our company has 100,000 medical profile products extrusion clean workshop, suitable for the production of high standard medical products.

Class 100,000 medical profile products extrusion clean room

- Meets strict health and safety standards
- High precision production process control
- Efficient production capacity and high quality products
- Environmental protection and energy saving

Provide OEM Injection Molding OEM

We offer a full range of OEM services, including product design support, mold making services, manufacturing, quality control, packaging logistics and after-sales services. No matter what your needs are, we can provide flexible service solutions to help you achieve your business goals.

Micro precision injection molding machine imported from Germany

- High Productivity
- Broad Applicability
- Precision Machining
- Material Savings

Specialized Processing Equipment

Our CNC engraving workshop is equipped with advanced CNC engraving equipment, including 3-axis, 4-axis, 5-axis engraving machines and high-precision walking centers, specializing in high-precision and high-quality parts processing. We are capable of handling complex machining tasks, such as cutting, engraving, drilling and milling of precision parts, and are committed to providing the best machining services to meet the various needs of customers for high precision and quality.

CNC Carving Shop

- High precision and quality processing
- Automation and efficiency
- Versatility and material suitability
- Low cost and high economic efficiency

Testing Equipment

Ultrasonic Detector

It is mainly used to detect defects such as inclusions, looseness, cracks and pores inside the product.

Colorimeter

To compare the color difference values of each batch of raw materials and ensure color stability between each batch of profiles.

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.

Universal Friction and Wear Testing Machine

Test the friction coefficient and wear amount of the material under certain load and speed.

Differential Scanning Calorimeter (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.

Vertical High-temperature Steam Sterilizer

Test whether PEEK5600GF30 material will precipitate carbon powder under high temperature disinfection environment.

Thermogravimetric Analyzer (TGA)

A thermogravimetric analyzer is an instrument that uses thermogravimetry to measure the temperature-mass relationship of a substance.

Digital Torque Tester

Used to measure and display torque to ensure that fasteners are torqued to requirements.

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

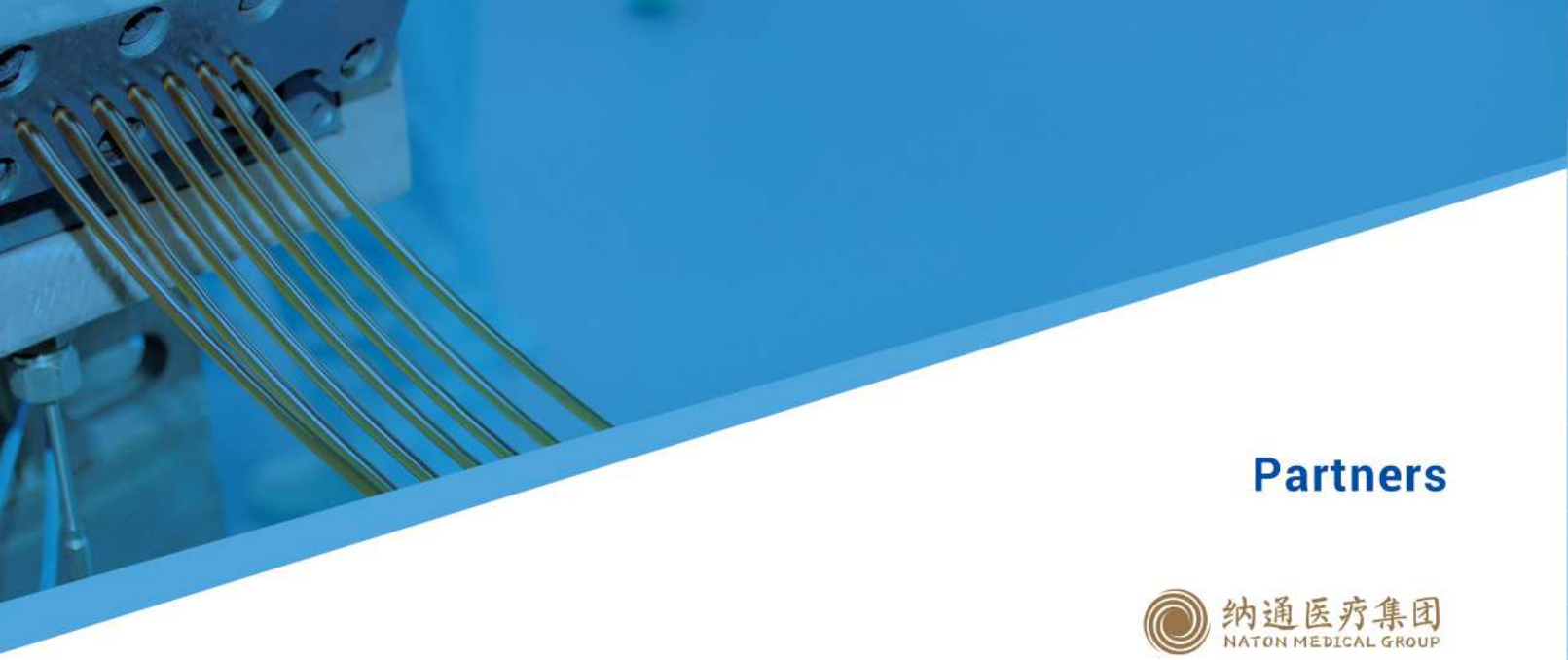
It is mainly used to detect whether there are defects such as internal metals, foreign objects, bubbles, cracks, etc. during the production process.

Three-coordinate

For products with high requirements for detection of three-dimensional dimensional accuracy and geometric and positional tolerance accuracy, the detection accuracy can reach 0.0005 mm, which can provide three-coordinate dimension inspection reports approved by the industry.

Image Measuring Instrument

Detecting some 2D dimensional accuracy and shape,For products with high tolerance requirements, the inspection accuracy can reach 0.001mm.



Partners

纳通医疗集团 NATON MEDICAL GROUP

Medtronic

以心医疗 MitrAssist

WEGO ORTHO 唯高骨科

大博医疗 DOUBLE MEDICAL

MicroPort 微创医疗

SonoScape 开立

smith&nephew

Changzhou Junhua Medical Technology Co., Ltd.

Tel: +86 519 86228879 +8613915088386
mail: chinaPEEK@chinaPEEK.com
Address: No. 160 West Lake West Road, Building 2, Wujin National High-tech Industrial Development Zone, Changzhou City, Jiangsu Province, China