

JiangSu JunHua HPP Co., Ltd.

BUSINESS **PHILOSOPHY** 经营理念 诚信·务实·合作·创新·共赢

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8000+
Industry Elite Customers

PEEK, PI and widely used in foot machinery, aerosp. medical equipment

Square Meters of Standardized Plant

20000+

PEEK Product Application Cases

Jiangsu Junhua Special Polymer Materials Co., Ltd. focuses on the application, development and production of PEEK (polyether ether ketone), PI (polyimide) and other high-performance special engineering plastic resins and profiles, and has formed a whole industry chain with PEEK resin raw material polymerization, modified granulation, plate and bar segments and other profiles continuous extrusion molding and finished parts injection molding and machining.

PEEK, PI and other high-performance plastic parts produced by our company have been widely used in food processing, packaging and beverage filling, textile printing and dyeing machinery, aerospace, special equipment, new energy vehicles, electronic semiconductors, medical equipment, petrochemical machinery and other fields.

Junhua shares warmly look forward to exchanges and cooperation with special engineering plastics research and use units, jointly promote the application of special engineering plastic parts such as PEEK and PI in various industries, and achieve product upgrading.

Welcome to our company for guidance and exchange!





>>> Process Capability

- The formulation design and composite modification of special polymer materials such as PEEK and PI;
- Making drawings, 3-D drawings according to products;
- Cooperate with customers to carry out the application development and production of new products of special polymer materials:
- ♦ There are nearly two thousand kinds of injection molding molds for PEEK and PI parts in various industries;
- Continuous extrusion production of PEEK plate, rod, tube and sheet:
- Provide testing services for hardness, mechanical properties, friction and wear performance indicators.

>>> Advantages



ENTERPRISE HONOR

>>> R&D Platforms & Patents

- < Preparation of phenol-terminated polyaryletherketone polymers>
- <a continuous CF/PEEK thermoplastic composite material and its production method>
- 26 patents for inventions and 33 patents for utility models.





Jiangsu Industrial Design Centre

We can help customers to optimize the design of the structure, function and appearance of PEEK parts. With rich experience in the design and manufacture of PEEK precision moulds, adopt advanced processes such as hot runner to significantly reduce costs.



Jiangsu Enterprise Technology Centre

With the advantages of the platform, the layout of the 'industrial chain + innovation chain, solve the key technical problems, attract scientific talent, improve the R & D management system, improve the rate of conversion of results, to become a high-quality enterprises in the PEEK industry to master the core technology.



Jiangsu Engineering and Technology Research Centre

Positioned around the PEEK and other high-performance special engineering plastics industry needs, to promote scientific and technological innovation as the goal, to strengthen the engineering R & D platform construction.

>>> System Certification









Company through

ISO9001, IATF16949 certification, ISO13485 certification, AS9100D aerospace quality system certification,

FDA food grade certification, RoHS testing and other third-party certification.

>>> Qualification Certificate









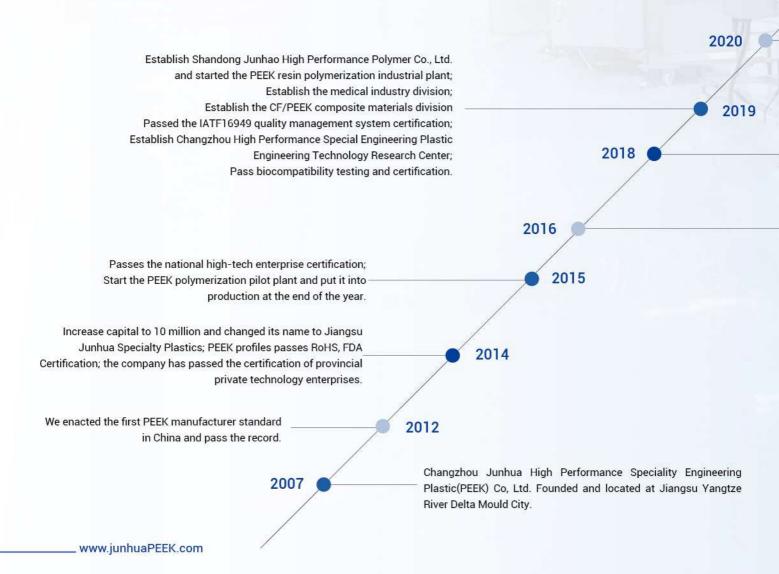




DEVELOPMENT HISTORY

Continuous CF/PEEK thermoplastic composites and medical-grade AKSOPEEK® have passed the new product verification by Industry And Information Technology Department of Jiangsu. Completed equity incentives and corporate shareholding reform. Initiate the standardization of internal control system for IPO. Initiate the design and construction of a new smart factory.

Establish "Changzhou Industrial Design Center" and "Provincial
Engineering Technology Research Center".
The "Jiangsu Province Double Entrepreneurship Project" was
successfully declared.
Pass the AS9100D aerospace system certification.
Win the title of "Changzhou Specialty, Specialty and New enterprise"
and "2021 Material SAMPE China Innovation Finalist Award".



2024

Changzhou Jur
Won the titles
"Jiangsu Provi

2021

Junhua shares Changzhou intelligent new factory began to lay the foundation.

Junhua Shares won the second prize of Jiangsu Science and Technology Award.

Changzhou Junhua Medical entered Gongyanhui and opened a new factory. Won the titles of national specialized and new "Little Giant" Enterprise, "Jiangsu Provincial Enterprise Technology Center", "Jiangsu Industrial Design Center" and so on.

The company's medical PEEK material preparation key technology-PEEK medical catheter R&D and industrial project (Changzhou Key R&D Program in 2020-Industrial Technology Support Program) received government funding support.

PEEK5600CF30 and CF/PEEK composite materials have passes the ISO10993 biocompatibility test.

The PEEK composite material developed by Junhua chinaPEEK has realized the high-reliability zero-locking performance of the booster servo mechanism, and contributed its own meager strength to the successful launch of the Long March 5B rocket.

Establish Shandong Junhao High Performance Polymer Co., Ltd. and started the PEEK resin polymerization industrial plant; Establish the medical industry division;

Establish the CF/PEEK composite materials division

Passed the IATF16949 quality management system certification;

Establish Changzhou High Performance Special Engineering Plastic Engineering Technology Research Center;

Pass biocompatibility testing and certification.

Pass ISO9001 quality management system certification.

PEEK and Property

PEEK (polyether ether ketone) resin is a special thermoplastic material with high performance, and is one of the most important varieties of commercial polyether ether ketone resins. At present, PEEK has excellent high temperature resistance, wear resistance, self-lubrication, low noise, corrosion resistance, high strength and other comprehensive properties, is widely used in textile printing and dyeing machinery, food processing, packaging and beverage filling, automotive and aerospace and other fields.

[PEEK shows excellent overall performance due to its large amount of benzene ring structure in its molecule]



Lightweight

Compared with metal, the use of energy consumption is significantly reduced



High Temperature Resistance

melting point 343°C, long-term use temperature of 260 °C, short-term use temperature up to 300°C.



Wear-resistant

PEEK and its composite materia have good wear-resistant properties, which is three times than that of copper alloy.



Hydrolysis Resistance

low hygroscopicity, can work in water and steam for a long time.



Corrosion Resistance

resistant to acids and alkalis and other solvents, high temperature halogen and strong acid corrosion, etc., at room temperature dissolved in concentrated sulfuric acid.



Self-lubricating

it can work stably for a long time without oil, and the appearance of the equipment is more neat and clean.



Convenient Moulding

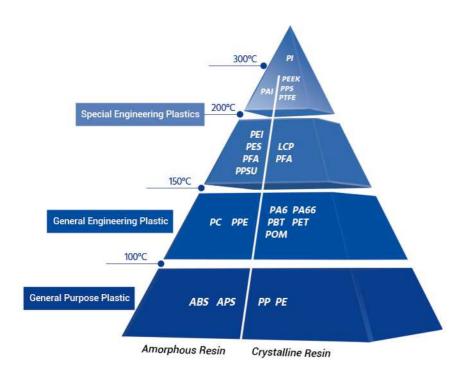
moulding characteristics, according to the customer's drawings or samples can be easily processed using a variety of processes or a variety of complex characteristics.



Dimensional Stability

low coefficient of expansion, which radically reduces the risk of swelling.

>>> Plastic Classification







Continuous extrusion of PFFK sheet

Compared with the traditional molding process, its uniformity and production efficiency are significantly improved. And according to customer needs to develop U-shaped, Z-shaped and other special-shaped profiles.

The introduction of 1250mm wide PEEK plate extrusion production line imported from Europe has greatly improved the company's production capacity while improving the quality of the plate, effectively ensuring the customer's requirements for product delivery.

Continuous extrusion of PEEK rod

Excellent machining performance, can replaced product of large size, high thickness and small batch that can't be finished by injection molding.

PEEK rods diameter 1-300mm can be produced by extrusion. The general length is 1000 or 3000mm, length also customized, hundreds of mold existed to meet customer requirement, stock available all the year round.



1~300 - 1000~3000 mi

1000~3000 mm Please contact us for the specification list!



Continuous extrusion PEEK pipe

A new solution for lightweight pipework that meets the aerospace industry's stringent requirements for safety, quality and performance.

Lighter than comparable metal tubes used for low-pressure liquid transport.

Can be bent, molded and adapted for flaring and reinforcement.

Please contact us for the specification list!

PEEK Main Material Grade and Typical Properties

>>> Mechanical Behavior

Item	Test Standard or	Unit	PEEK5600G	PEEK5600GF30	PEEK5600CF30	PEEK5600LF30	PEEK5600FE20	
100111	Instrument	O.III.	100%PEEK	PEEK+30% glass fiber	PEEK+30% carbon fiber	PEEK+30%(carbon fiber+graphite+PTFE)	PEEK+20%PTFE	
Tensile Strength (23°C)	ISO 527	MPa	95	175	250	145	70	
Tensile Modulus (23°C)	ISO 527	GPa	3.8	11	23	12.5	/	
Elongation at Break (23°C)	ISO 527	%	35	2.0	1.5	2.2	/	
Bending Strength (23°C)	ISO 178	MPa	155	235	350	220	118	
Bending Modulus (23°C)	ISO 178	GPa	3.5	10	21	11	1	
Charpy Impact Strength (No Gap)	ISO 179/1U	kJ/m²	No break	55	45	32	No break	
IZOD Impact Strength (Gap)	ISO 180/A	kJ/m²	4	6	6.5	4	6	

>>> Thermal Performance

Melting Point	ISO11357	°C	343	343	343	343	343
Distortion Temperature	ISO 11357	°C	143	143	143	143	143
Continuous Using Temperature	ISO 75A-f	1.8MPa、℃	152	315	315	293	150
Coefficient of Thermal Expansion	ASTM D696	ppm K-1	45	22	15	22	70
Thermal Conductivity	ISO /CD22007-4	W/ (m-K)	0.29	0.32	0.95	0.86	1

>>> Electrical Performance

Dielectric Strength (2mm)	IEC 60243-1	kV/mm	20	19	/	1	19
Dielectric Constant	IEC 62631	-	3.0	3.3	/	1	2.7
Surface Resistivity	GB/T31838.3	Ω	1015	1014	1	1	1015
Volume Resistivity	IEC 62631	Ω·cm	1015	1015	10°	10°	1

>>> Other Performance

Colour	145	2	Natural	Natural	Black	Black	Natural
Melt Flow Rate (400°C、2.16kg)	ISO 1133	g/10min	6-10	2-5	1-3	2-5	1
Density	ISO 1183	g/cm3	1.30±0.02	1.50±0.02	1.40±0.02	1.44±0.02	1.41±0.02
Water Absorption (23°C, 24Hrs)	ISO 62-1	%	0.07	0.05	0.04	0.05	0.15
Mould Shrinking Percentage	Parallel to the flow direction	%	1.2	0.4	0.1	0.3	1.3
Mould Shrinking Percentage	Perpendicular to the direction of flow	%	1.5	0.8	0.5	0.6	1.8
Rockwell Hardness	GB/T 3398.2	HRR	118	119	121	108	113
Flammability Rating	UL 94	/	V-0	V-0	V-0	V-0	1
Friction Coefficient	ASTM D3702	100N-120rpm	0.30-0.38	0.38-0.46	0.15-0.25	0.18-0.30	0.1-0.2

★ This parameter represents a value, not a guaranteed value. If you need to call me division technology department for more detailed technical indicators!

Brand Number	PEEK5600G	PEEK5600CF30	PEEK5600GF30	PEEK5600LF30
PEEK Resin				
Brand Number	PEEK5600FE20	PEEK5600SWR	PEEK5600CF30-GQ	JUNHUA-HT4600CF30
PEEK Resin				

PI (Polyimide) Polymer

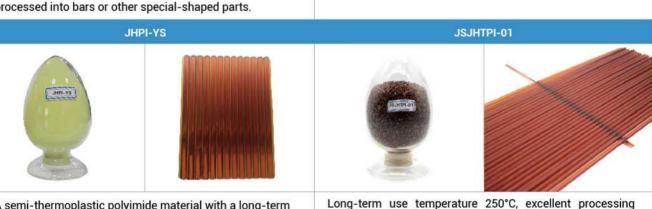
Item	Standard	Unit	JHPI-10	JHPI-10-21 含15% graphite	JHPI-10-22 含40% graphite	JHPI-HT	JHPI-YS	JSJHTPI-01	JSJHTPI-02
Density	ISO 1183	g/cm ³	1.40	1.43	1.7	1.4	1.36	1.32	1.36
Tensile Strength	ISO 527	MPa	96	90	60	92	121	90	97
Elongation at Break	ISO 527	%	10	5	2.5	8	13	8	8
Bending Strength	ISO 178	MPa	148	126	90	140	171	130	138
Charpy Impact Strength	ISO 179	MPa	90	135	13	88	(No break)	100	(No break)
Heat DistortionTemperature	ISO 75-1/-2	°C	>300	>300	> 300	> 320	255	230	250
Continuous UsingTemperature	UL746B	°C	350	350	350	380	250	250	250

★ The standard characteristics of the above materials can not be used as acceptance criteria! If you need other performance standards, you can contact us for further consultation!

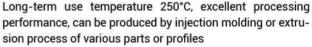


It has high temperature resistance, long-term use temperature of 350°C, and instantaneous temperature of 400°C. It has good processing characteristics and can be processed into bars or other special-shaped parts.

Long-term use temperature of 350°C, and instantaneous temperature over 400°C. Adding 15% graphite, the friction coefficient is low and the wear resistance is better.



A semi-thermoplastic polyimide material with a long-term use temperature of up to 250 ° C has high dimensional stability and transparency.







PI Raw Material PI Sheet/Rod

PEEK Main Feature Advantages

>>> Corrosion Resistance

PEEK maintains excellent resistance to various chemicals over a wide temperature range, maintains excellent mechanical properties, rarely fades or expands under normal circumstances, and has excellent chemical resistance. At the same time, the water absorption rate of PEEK is very small, and the saturated water absorption rate of 23°C is only 0.5%. Moreover, PEEK has good heat resistance and can be used in pressurized hot water or steam at 300°C.

Unfilled PEEK strips were immersed in chemical reagents at constant temperature for at least 7 days (concentrated, unless otherwise stated). Chemical compatibility was assessed by preserving mechanical properties, supplemented by weight or dimensional changes. Compatibility is classified as A, B or C, as explained below;

- A does not work. Materials can be used in applications exposed to these agents. However, it is still recommended that the actual application needs to be verified.
- B Slight effect. Materials can be used in certain situations where they are exposed to these agents. It is necessary to evaluate the performance criteria applied in these specific applications.
- C Serious effect. Materials are considered to be permitted to come into contact with such chemicals under certain circumstances.

ACIDS	酸类	23°C	100°C	200°C
Hydrochloric Acid,Conc.	浓盐酸	Α	В	
Aqua regia	王水	С	С	С
Carbonic Acid	碳酸	Α	Α	
Chromic Acid,40% Conc.	40%铬酸溶液	Α		
Chromic Acid,Conc.	浓铬酸	С	С	С
Citric Acid	柠檬酸	Α	Α	
Nitric Acid,10%Conc.	10%硝酸溶液	Α	Α	
Nitric Acid,Conc.	浓硝酸	С	С	С
Nitrous Acid,10%Conc.	10%亚硝酸溶液	Α		
Sulfuric Acid,>40%Conc.	>40%硫酸溶液	С	С	С
Oxalic Acid.	草酸	Α	Α	
ALCOHOLS	醇 类	23°C	100°C	200°C
Butanol	丁醇	Α		
Ethanol	乙醇; 酒精	Α	Α	Α
Glycerol	甘油; 丙三醇	Α		
Methanol	甲醇	Α	Α	
BASES	碱,金属氢氧化物	23°C	100°C	200°C
Ammonia 880	饱和浓氨水	Α		
Ammonia liquid	液氨	Α	Α	Α
11 1 1 1000	10%氢氧化铵溶液	Α		
Ammonium Hydroxide,10%Conc.				
Ammonium Hydroxide,10%Conc. Calcium Hydroxide	氢氧化钙	Α		
	氢氧化钙 10%氢氧化钾溶液	A		

>>> Biocompatibility Test

Experimental Standards	Experiment Titles	Test Samples	Experiment Results
ISO10993-4	In vitro hemolytic properties test	PEEK5600G	V
ISO10993-5	In vitro cytotoxicity test	PEEK5600G	V
ISO10993-10	Intracutaneous reactivity test	PEEK5600G	V
ISO10993-10	Skin sensitization test	PEEK5600G	✓
ISO10993-11	Acute systemic toxicity test	PEEK5600G	V
ISO10993-11	Pyrogen test	PEEK5600G	V







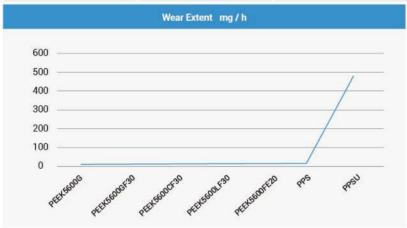




>>> Wear Resistance

Low coefficient of friction and outstanding wear resistance, better performance than metal in many harsh environments, no worry of rust and metal shavings.

Brand Number	Pre-Test Weight /g	Post-Test Weight /g	Friction Time /h	Wear Extent mg/l
PEEK5600G	2.347	2.313	24	1.42
PEEK5600GF30	2.452	2.385	24	2.8
PEEK5600CF30	2.425	2.413	24	0.5
PEEK5600LF30	2.634	2.603	24	1.29
PEEK5600FE20	2.562	2.559	24	0.13
PPS	2.484	2.475	1	9
PPSU	2.299	2.266	0.07(4min)	495



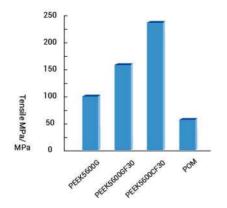


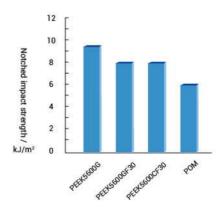
>>> High Strength

Compared with POM, PEEK5600G(pure PEEK) with higher strength and toughness.

This is mainly based on the main chain of the molecule of PEEK at the same time with toughness group - ether bond and rigid group - benzene ring, is a strong and tough materials. And its fibre reinforced, the strength greatly increased, such as PEEK5600CF30, the tensile strength of 230Mpa, is twice of the pure PEEK.

Aterial Type	Tensile MPa	Notched Impact Strength
PEEK5600G	103 MPa	9.5 kJ/m ²
PEEK5600GF30	170 MPa	9 kJ/m ²
PEEK5600CF30	230 MPa	9 kJ/m ²
POM	64 MPa	6 kJ/m ²







>>> PEEK Wear-resistant Fork Apply to Aseptic Cool Filling Production Line





>>> PEEK Wear-resistant Clamp Rail Column Apply to Aseptic Cold Filling Equipment





>>> PEEK Wear-resistant Clamp Rail Column Apply tp Beverage Filling Equipment





>>> PEEK Wear-resistant Low Noise Roller Apply to High Speed Bottle Blow Machine





>>> PEEK Three Pieces Set of Part Apply to Aseptic Cold Filling Equipment





>>> PEEK Wear-Resistant Low-noise Dual Gears Apply to Beverage Filling Equipment





>>> PEEK Spray Parts Apply to Aseptic Cold Filling Equipment





>>> PEEK Self-Lubricating Wear-Resistant Shaft Sleeve Apply to Beverage Filing Equipment



>>> PI Heat Insulation Cap



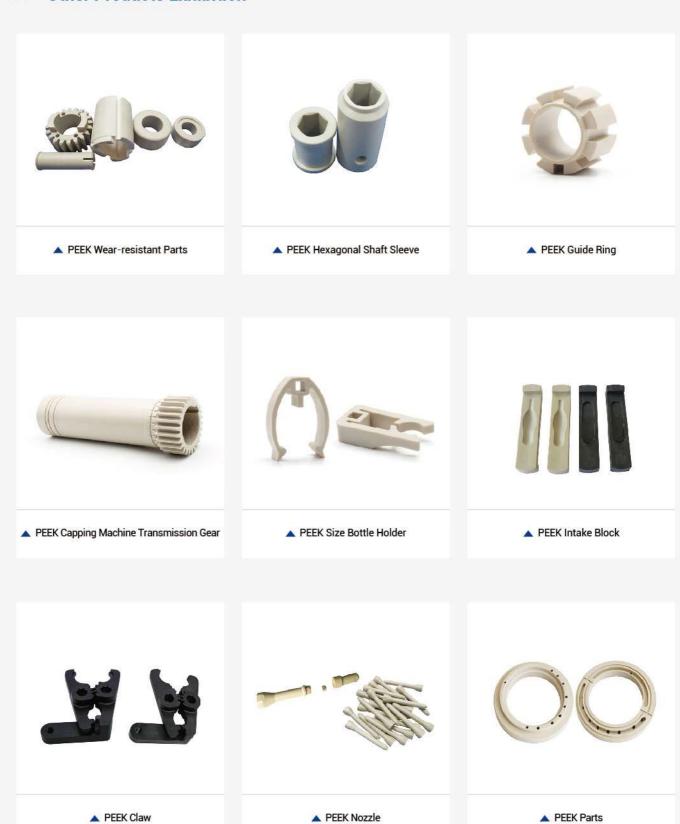
>>> PEEK Bottle Clamp Block Guide Sleeve Roller Apply to Beverage Filling Equipment

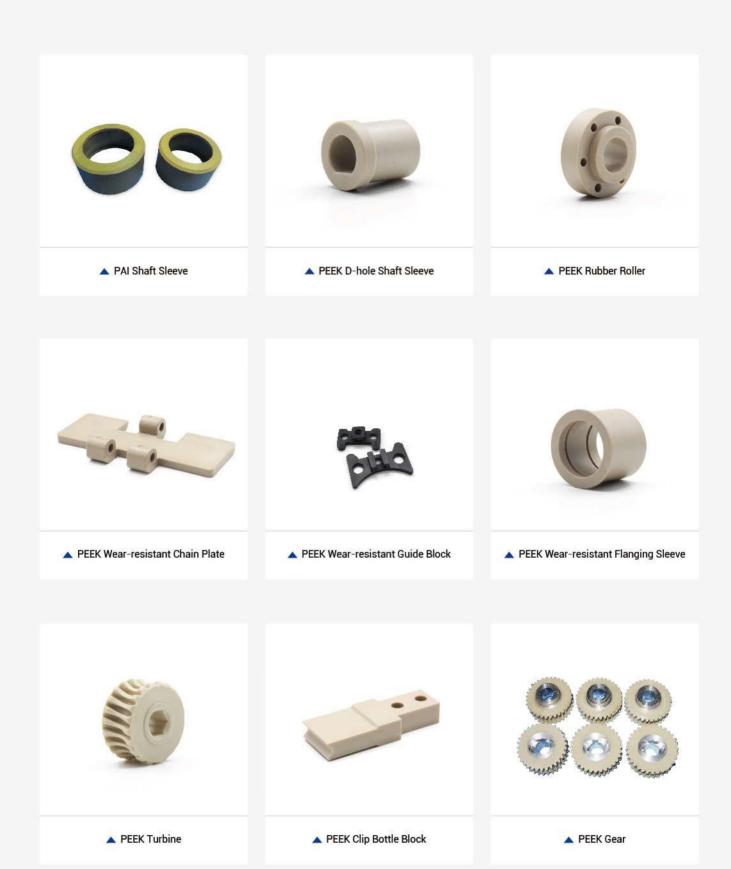


>>> PEEK Bottle Neck Guard and Spring Seat Apply to Beverage Filling Equipment



>>> Other Products Exhibition





Process Capability

RAW MATERIAL



Self-development PEEK Material

The company's self-developed polymerized PEEK resin raw materials provide differentiated solutions for different downstream needs. This move meets the diversified needs of the industry, significantly reduces customer costs, realizes effective domestic substitution, and enhances market competitiveness.

OPENING MOULD



Strong New Product Design Capabilities

The company set up new product development department and PEEK industrial design center to provide customers with PEEK injection molding product structure and mold design. So far, we have completed thousands of PEEK product designs and accumulated rich experience in high-precision and ultra-complex product development.

PLASTIC INJECTION



Eighteen Years Experience in Injection Molding

Due to the high injection temperature, poor fluidity and large shrinkage rate, PEEK material is more difficult than ordinary plastics in dimensional accuracy and appearance control. Our company has 18 years of experience in PEEK injection molding, and the mature process ensures that the product size meets customer needs and the order is completed with minimum raw material loss.

>>> Precision Mold Processing Design



Testing Equipment

>>> Product Processing and Quality Control



Cool Jet Dry Ice Deburring Equipment Improve the Quality of Machined Parts

- ▶ Non-destructive cleaning;
- Improve product quality and reduce scrap rate;
- ▶ No need to manually remove burrs and flashes;
- ► No secondary waste;
- Remove burrs and flashes faster and more evenly.







Dry ice cleaning technology is an effective deburring solution for removing burrs and flaps from machined and molded parts. Including small holes, cross holes, pollution-free, can effectively prevent the pipeline flow reduction or blockage caused by burrs, and no residue.

After

>>> Raw Material Performance Testing Equipment



Universal testing machine is used to test conventional mechanical performance parameters such as product tensile bending strength and modulus.



The impact tester is used for raw material inspection and testing the impact strength.



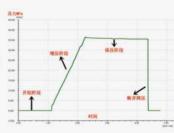
Hardness tester is used to test the Rockwell hardness of raw materials.



Density detector is used to detect the actual density of the product.



The liquid chromatograph can be used to detect the pressure-tightness and pressure-holding properties of pipe connections such as joints, two-way and three-way connections.





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