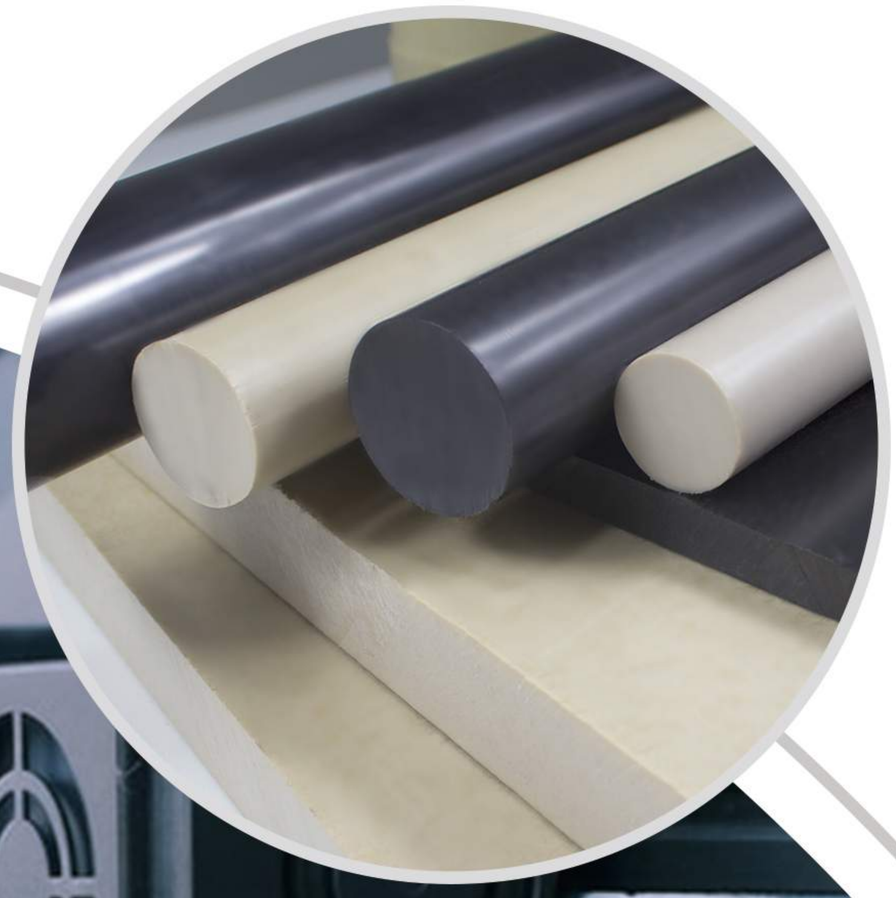
YUWEI
南京裕威

PEEK

Profiles and products
Professional manufacturers
service providers

Superpolymer -PEEK (polyether ether ketone), PI (polyimide) and other special engineering plastics manufacturers and service providers

www.chinaywpeek.com



Nanjing Yuwei New Materials Co., Ltd.

COMPANY PROFILE

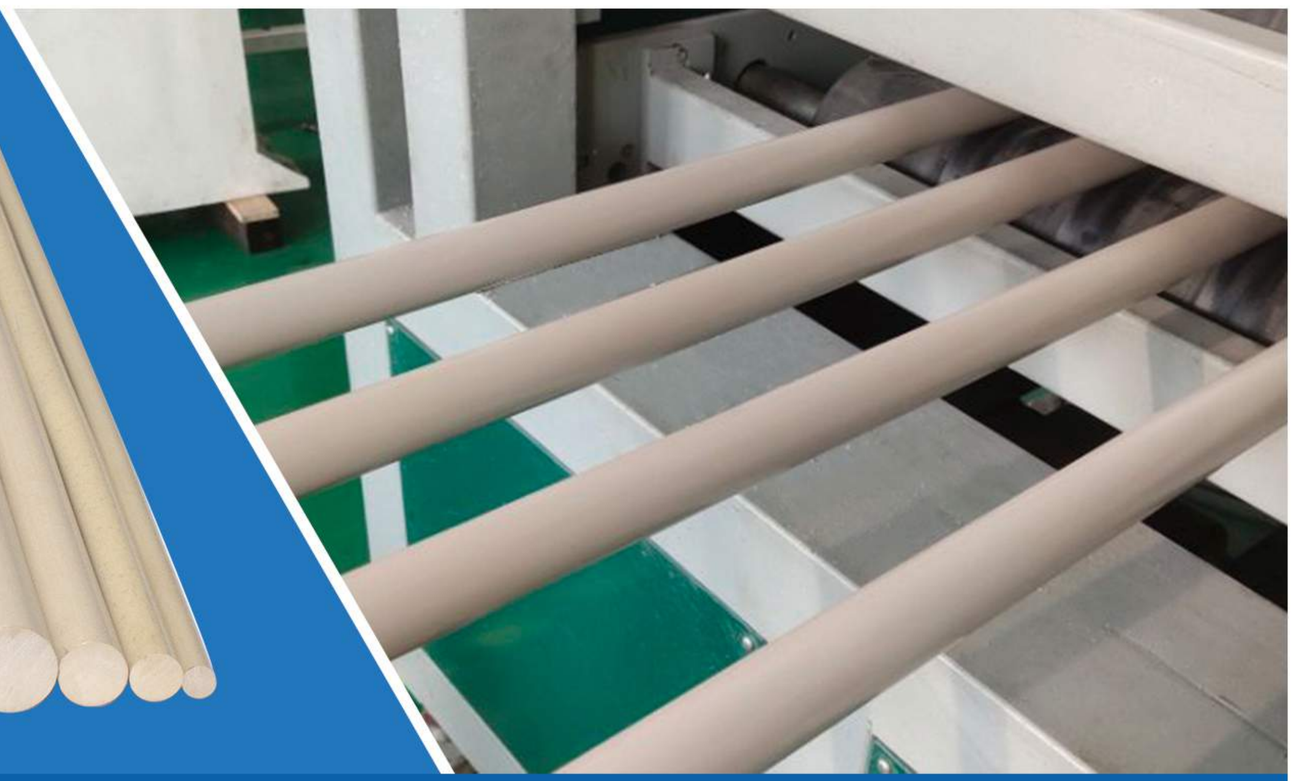
Nanjing Yuwei New Materials Co., Ltd. specializes in the extrusion molding of special engineering plastic profiles such as PEEK, PPS, PPSU, PEI and the secondary processing of products, and it provides R&D, design and production integrated solutions to special engineering plastic profiles and parts for different industries.

The company puts into production a number of profile extrusion lines, and can independently produce PEEK bar materials, PEEK sheet materials, PEEK pipes, PEEK sheets, PEEK profiled bars, PPS rods, tubes and plates, etc. in large quantity.

After years of experience, Nanjing Yuwei has been able to produce a wide range of conventional PEEK profiles and has had a large inventory, and can process unconventional PEEK profiles and PEEK profiled bars according to customer requirements. The company has horizontal injection molding machines, vertical injection molding machines, large molding machines, high-precision CNC lathes, CNC processing center and other mechanical processing equipment, and specializes in customizing and processing PEEK, PI and PPS parts of various specifications and different purposes.

Nanjing Yuwei New Materials Co., Ltd. is a new type of technology-innovative enterprise. It has many years of experience in production and processing in the field of PEEK products. The company is willing to cooperate with customers with the best quality products and the sincerest service for long term, to jointly promote the application of PEEK products and other special plastic products in various industries.

PEEK ROD



PEEK ROD

Nanjing Yuwei New Material Co.,Ltd. is fully equipped with the independent extrusion production capacity of PEEKrods which have been successfully extruded from Φ4-220mm, and has a lot of inventory.

PEEK ROD SPECIFICATION TABLE

Dimensions(mm)	Weight(kg/m)	Dimensions(mm)	Weight(kg/m)	Dimensions(mm)	Weight(kg/m)
Φ4×1000	0.02	Φ28×1000	0.9	Φ90×1000	8.93
Φ5×1000	0.03	Φ30×1000	1.0	Φ100×1000	11.445
Φ6×1000	0.045	Φ35×1000	1.4	Φ110×1000	13.36
Φ7×1000	0.07	Φ40×1000	1.73	Φ120×1000	15.49
Φ8×1000	0.08	Φ45×1000	2.18	Φ130×1000	18.44
Φ10×1000	0.125	Φ50×1000	2.72	Φ140×1000	21.39
Φ12×1000	0.17	Φ55×1000	3.27	Φ150×1000	24.95
Φ15×1000	0.24	Φ60×1000	3.7	Φ160×1000	27.96
Φ16×1000	0.29	Φ65×1000	4.64	Φ170×1000	31.51
Φ18×1000	0.37	Φ70×1000	5.32	Φ180×1000	35.28
Φ20×1000	0.46	Φ75×1000	6.23	Φ190×1000	39.26
Φ22×1000	0.58	Φ80×1000	7.2	Φ200×1000	43.46
Φ25×1000	0.72	Φ85×1000	7.88	Φ220×1000	52.49

Note:This table shows the specifications and weight of PEEK-1000 rod (pure), and the above specifications of PEEK-C1030 rod (carbon fiber), PEEK-G1030 rod (glass fiber), PEEK antistatic rod and PEEK conductive rod can be produced.The actual weight is subject to weighting.

PEEK ROD

Material name	PEEK-1000 rod (pure)	PEEK-C1030 rod (carbon fiber)	PEEK-G1030 rod (glass fiber)	PEEK antistatic rod	PEEK conductive rod
Color	True colors	Black	True colors	Black	Black
Performance introduction	PEEK-1000 bar is extruded from PEEK pure resin, which has good toughness and strong impact resistance.	PEEK-C1030 bar filled with 30% carbon fiber reinforcement has better mechanical properties (higher elastic modulus, mechanical strength and creep) and better wear resistance.	PEEK-G1030 filled with 30% glass fiber reinforced plastic has better rigidity and creep resistance, and better dimensional stability, so it is ideal to manufacture structural parts.	Anti-static bar PEEK bar can avoid the harm of voltage discharge to people or objects. Based on static electricity control and permanent dissipation of static charge, this kind of plastic can provide high-level safety for application fields.	Conductive PEEK bar is based on PEEK raw material, which is mixed with carbon fiber, carbon black, metal fiber, metal powder, permanent antistatic masterbatch, etc., so as to achieve the functions of conductivity and electromagnetic interference shielding.

PEEK-1000 rod

PEEK-C1030 rod

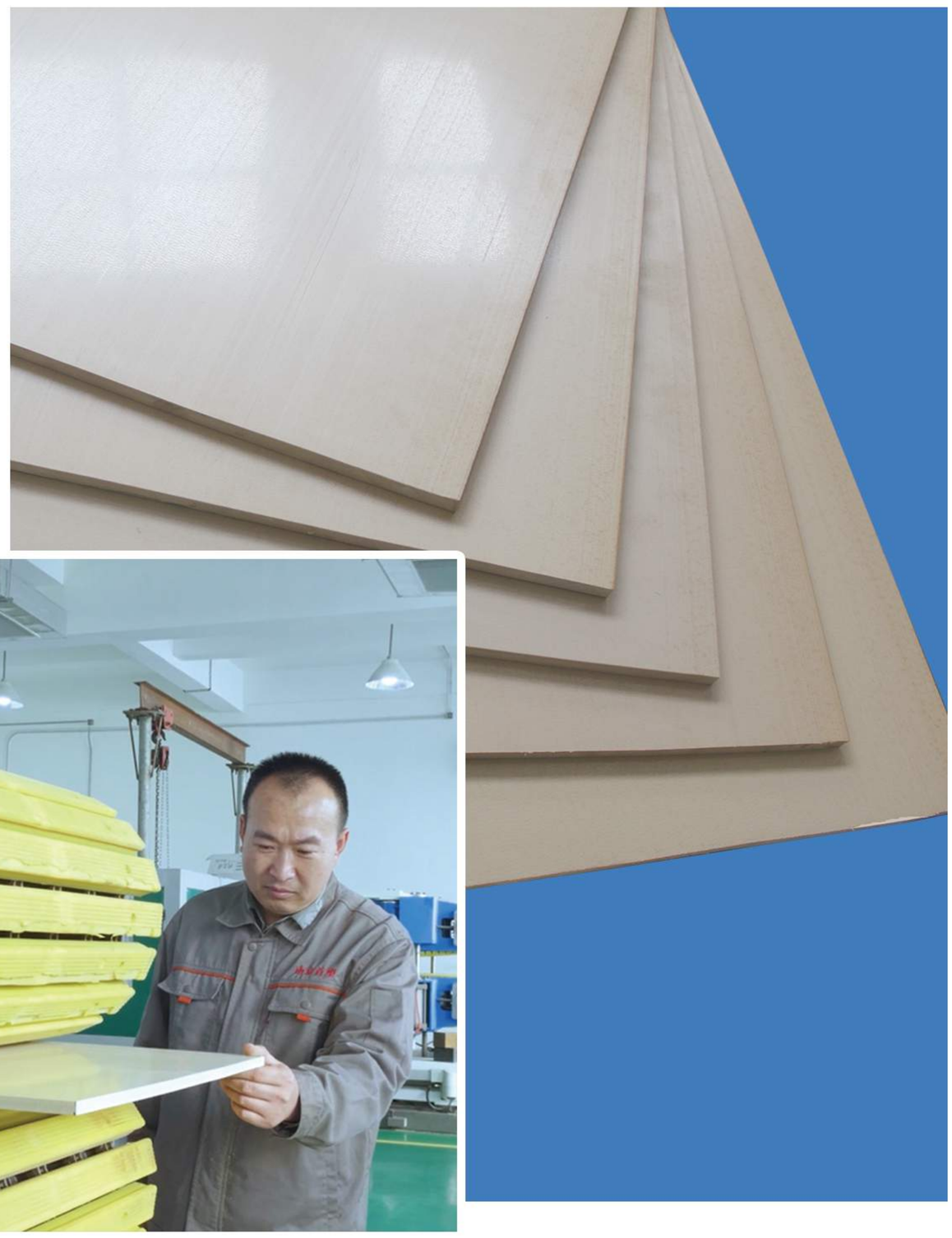
PEEK-G1030 rod

PEEK antistatic rod

PEEK conductive rod

PEEK SHEET

Nanjing Yuwei New Material Co., Ltd. has possessed the large-scale extrusion production capacity of PEEK plates with size of 610*1220mm and the thickness ranging from 1-150mm, and has a lot of inventory.



PEEK SHEET

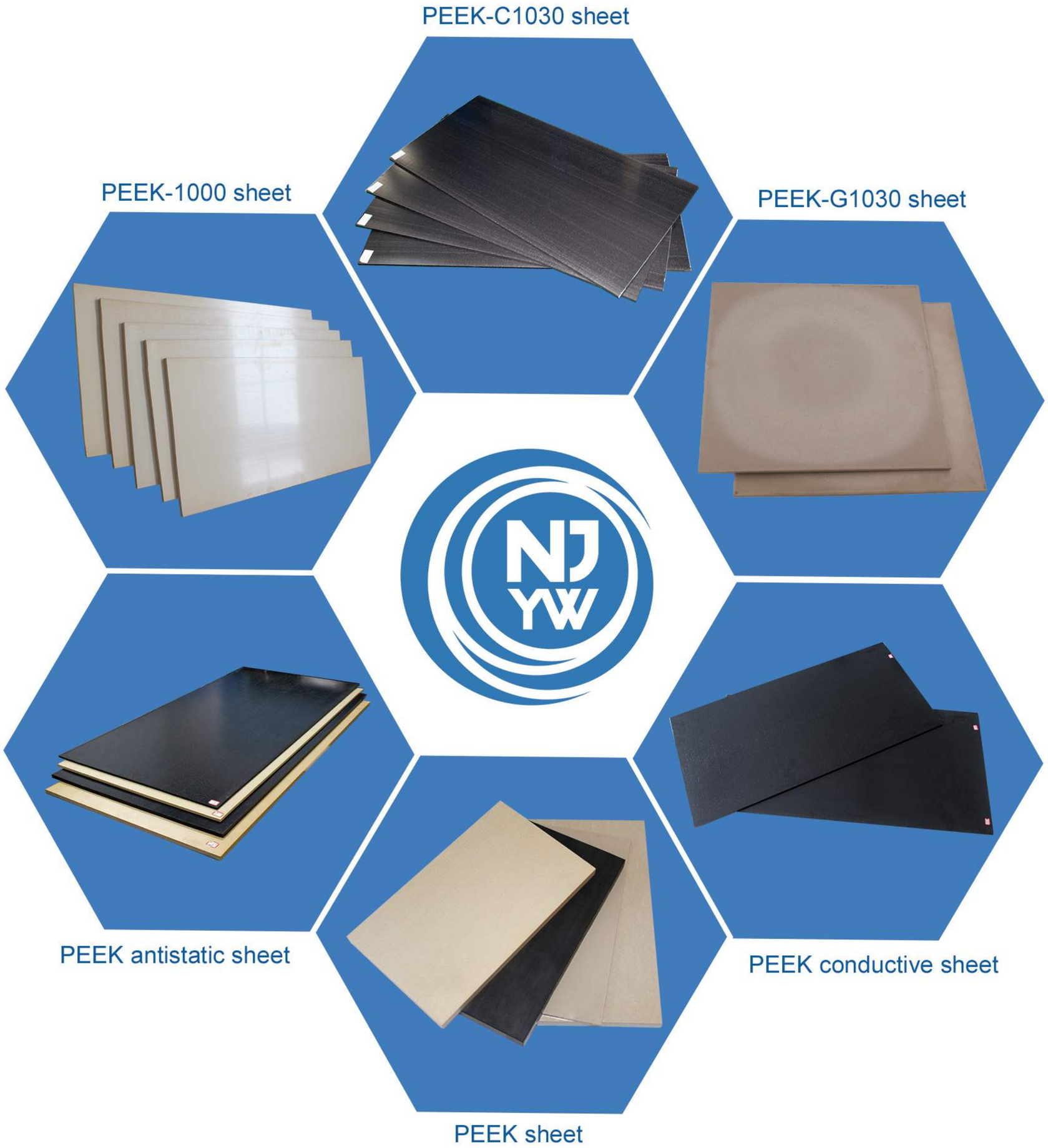
PEEK SHEET SPECIFICATION TABLE

Dimensions(mm)	Weight(kg)	Dimensions(mm)	Weight(kg)
1×610×1220	1.1	25×610×1220	26.13
2×610×1220	2.11	30×610×1220	31.15
3×610×1220	3.72	35×610×1220	36.17
4×610×1220	5.03	40×610×1220	41.20
5×610×1220	6.03	45×610×1220	46.23
6×610×1220	7.03	50×610×1220	53.25
8×610×1220	9.05	60×610×1220	62.30
10×610×1220	11.06	100×610×1220	102.5
12×610×1220	13.06	120×610×1220	122.6
15×610×1220	16.08	150×610×1220	152.71
20×610×1220	21.1		

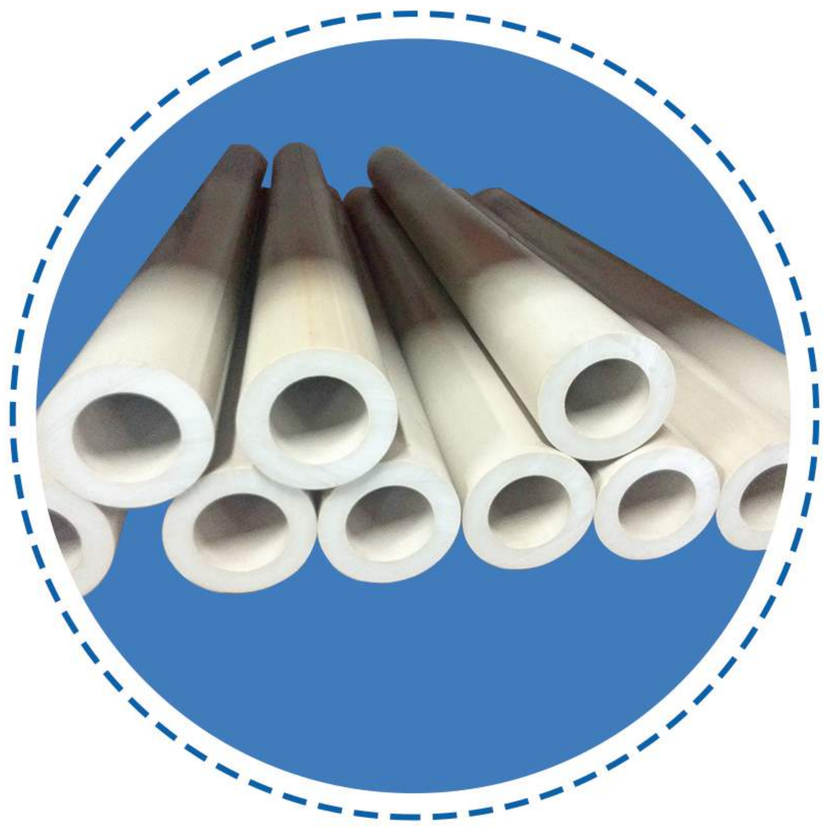
Note:This table shows the specifications and weight of PEEK-1000 sheet (pure), and the above specifications of PEEK-C1030 sheet (carbon fiber), PEEK-G1030 sheet (glass fiber), PEEK antistatic sheet and PEEK conductive sheet can be produced.The actual weight is subject to weighting.

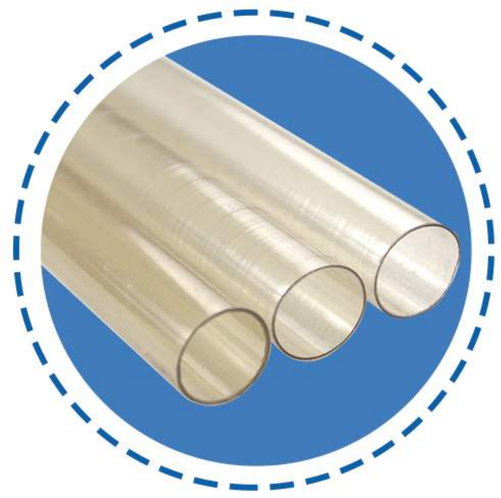
PEEK SHEET

Materials	Name	Features	Color
PEEK	PEEK-1000 sheet	Pure material	True colors
	PEEK-C1030 sheet	Add 30% carbon fiber	Black
	PEEK-G1030 sheet	Add 30% glass fiber	True colors
	PEEK antistatic sheet	Anti-static	Black
	PEEK conductive sheet	Conductive	Black



PEEK TUBE





PEEK TUBE

Nanjing Yuwei New Material Co., Ltd. has been devoted to the research and development of extrusion process for PEEK profiles in recent years, and PEEK pipes of various specifications can be designed, produced and extruded.

PEEK TUBE SPECIFICATION TABLE

OD(mm)	ID(mm)	length(mm)	Weight(kg)
30	10	1000	0.94
30	15	1000	0.82
30	20	1000	0.68
40	25	1000	1.23
45	25	1000	1.69
50	30	1000	1.93
70	40	1000	3.83
70	50	1000	3.15
Other specifications can be customized			

Note:The actual weight is subject to weighting.

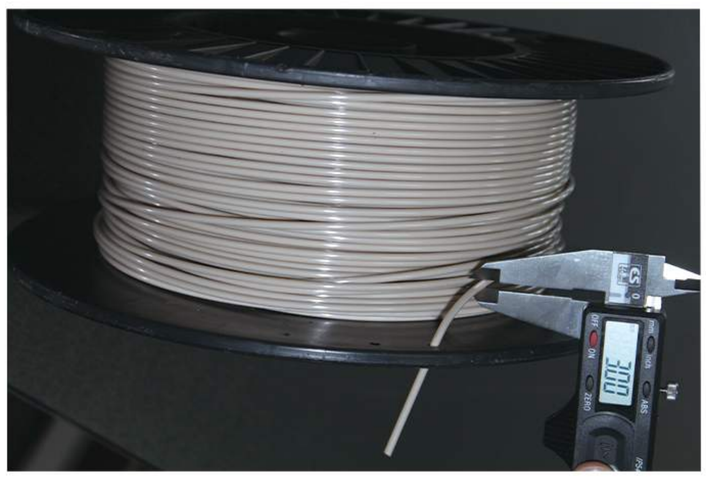
PEEK Filament & Capillary

PEEK Filament & Capillary

PEEK filament-capillary, with normal working temperature of 260℃, has corrosion resistance and can be used in solvent for a long time. Because of its hydrolysis resistance, PEEK filament-capillary can be cleaned and disinfected in high temperature steam. PEEK filament-capillary is an environmentally friendly material, which meets the requirements of FDA food hygiene level, and has flame retardancy and wide application range.

PEEK FILAMENT SPECIFICATION TABLE

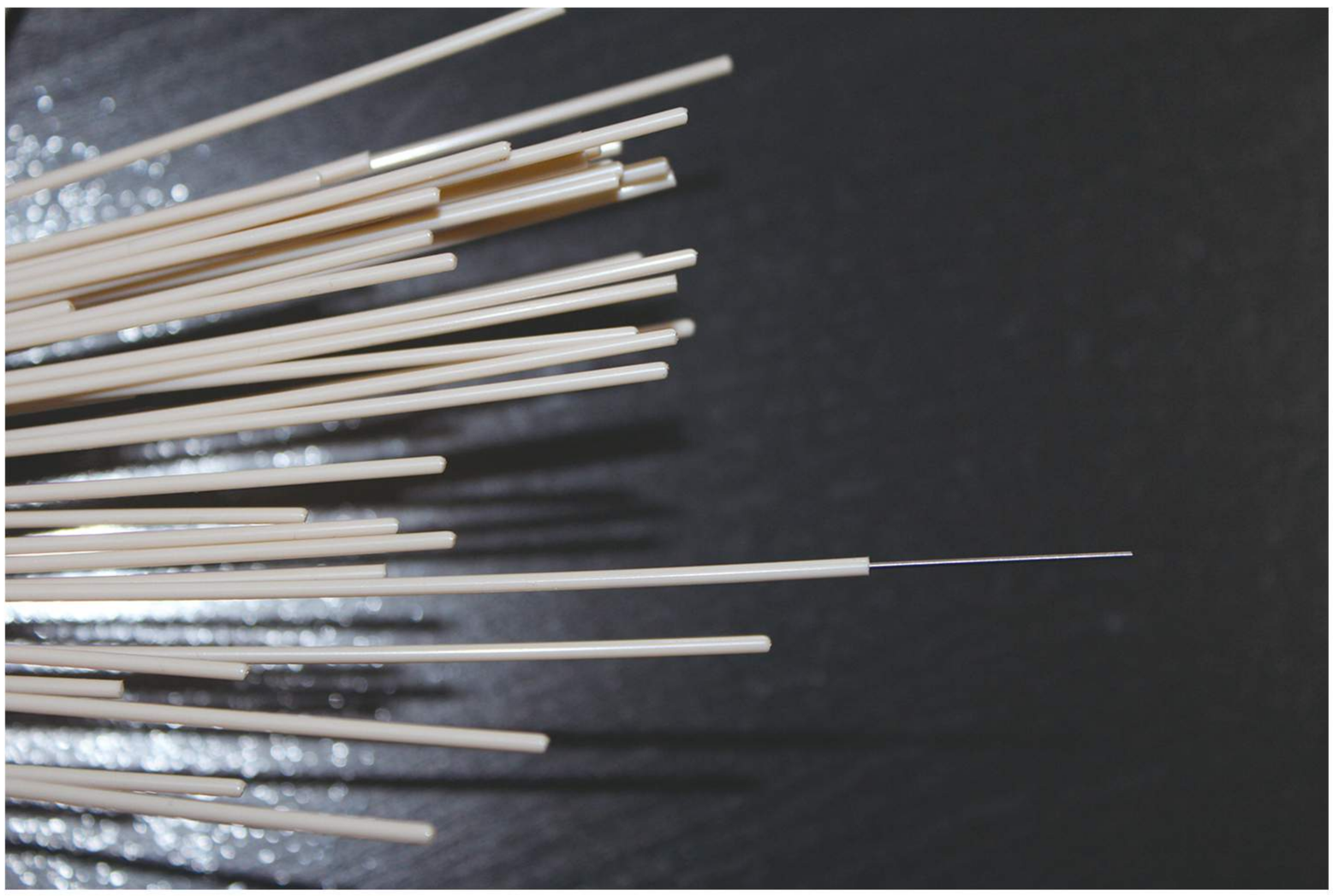
Product name	Product specifications
PEEK filament	Φ0.25mm
	Φ0.5mm
	Φ1mm
	Φ1.5m
	Φ1.75mm
	Φ2mm
	Φ2.5mm
	Φ3mm
	Φ4mm



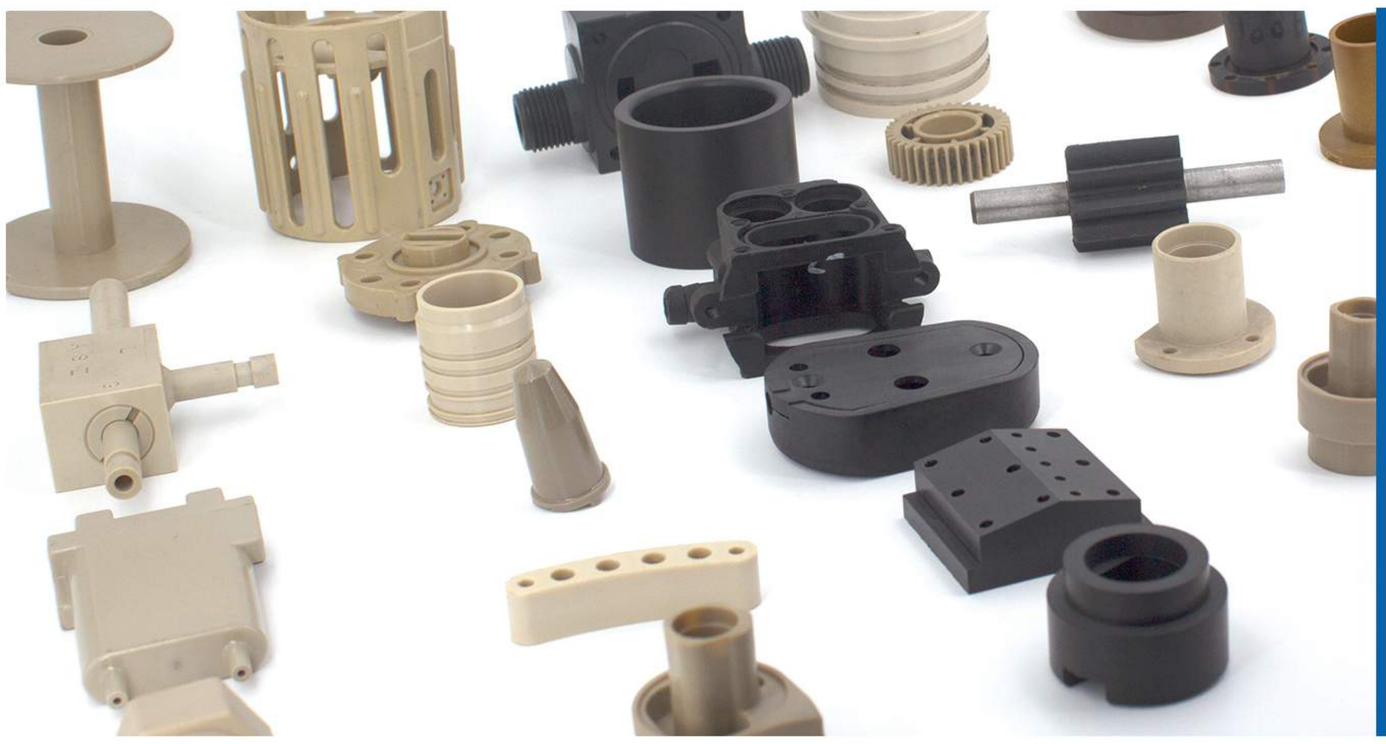
PEEK Filament & Capillary

PEEK CAPILLARY SPECIFICATION TABLE

Product name	Product specifications	
	OD	ID
PEEK capillary	1 (±0.05)	0.45 (±0.05)
1/16”PEEK capillary	Φ1.5–Φ1.60	Φ0.13
1/16”PEEK capillary	Φ1.5–Φ1.60	Φ0.25
1/16”PEEK capillary	Φ1.5–Φ1.60	Φ0.50
1/16”PEEK capillary	Φ1.5–Φ1.60	Φ0.75
1/16”PEEK capillary	Φ1.5–Φ1.60	Φ1.25
PEEK capillary	Φ1.7–Φ1.8	Φ0.66–Φ0.8
PEEK capillary	Φ2.5	Φ1.5
PEEK capillary	Φ2.5	Φ1.9
PEEK capillary	Φ2.45	Φ2.1
1/8”PEEK capillary	Φ3.10–Φ3.22	Φ1.00
1/8”PEEK capillary	Φ3.10–Φ3.22	Φ1.60
PEEK capillary	Φ4	Φ3.4
PEEK capillary	Φ4.5	Φ2.5
PEEK capillary	20.5	16.5
PEEK capillary	Φ12	Φ11
PEEK capillary	Φ11	Φ7.5
PEEK capillary	Φ6	Φ4
PEEK capillary	Φ19.8	Φ16.5



PEEK PRODUCTS



PEEK has the heat resistance and chemical stability of thermosetting plastics and the molding processability of thermoplastic plastics. The long-term use temperature of PEEK is about 260-280℃, and the short-term use temperature can reach 330℃. PEEK products are suitable for various harsh working conditions. PEEK also has excellent properties such as good self-lubrication, easy processing, stable insulation and hydrolysis resistance, which makes it widely used in aerospace, automobile manufacturing, electronic and electrical, medical and food processing fields.

PEEK screw

PEEK screws can be molded once by injection process, with low processing cost and price advantage; More corrosion resistant than metal screws; Never rust; Light weight; High temperature resistance; Excellent electrical performance; Radiation resistance.

PEEK ball

Compared with traditional metal balls and rubber balls, PEEK balls have incomparable advantages: good wear resistance and self-lubrication; High compressive strength; Low creep property; Lighter than metal, convenient for rapid reaction; Has no damage to the metal seat, and is beneficial to protecting parts and prolonging their service life.

PEEK joint

PEEK joint can directly replace stainless steel pipe, which is pressure-resistant, bio-compatible, low oxygen penetration, high temperature resistance, melting point up to 350℃, which is convenient to use with hand-tight joint and easier to cut than stainless steel.

PEEK gear

Advantages of PEEK gear: noise reduction, low density and light weight; Inertial force distance decreases; Excellent chemical resistance; High wear resistance and longer service life; The technology of combining with metal and other plastics is better; Injection molding can reduce the cost.

PEEK sealing ring

PEEK sealing ring has good performance, stable size and customizable specifications; High temperature resistance, wear resistance and strong mechanical properties.

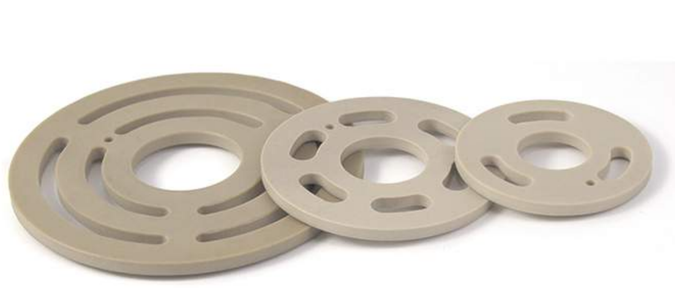
PEEK sleeve

PEEK bushing has the advantages of high temperature resistance, wear resistance, corrosion resistance and self-lubrication. Compared with metal materials, it has the advantages of light weight and low noise.

PEEK PRODUCTS

PEEK washer

PEEK bearing

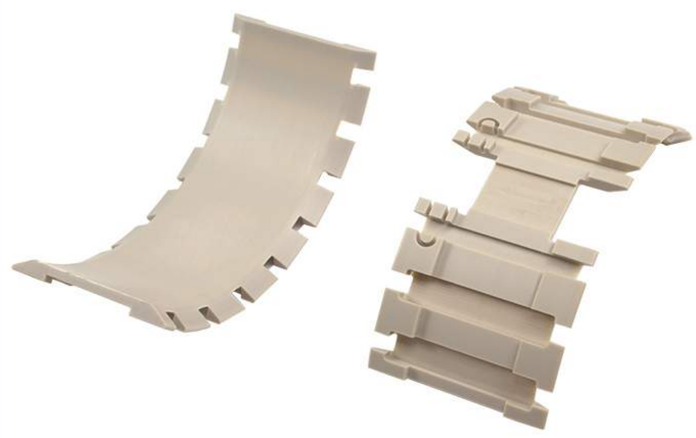


PEEK valve plate

PEEK gasket

PEEK universal ball

PEEK valve seat

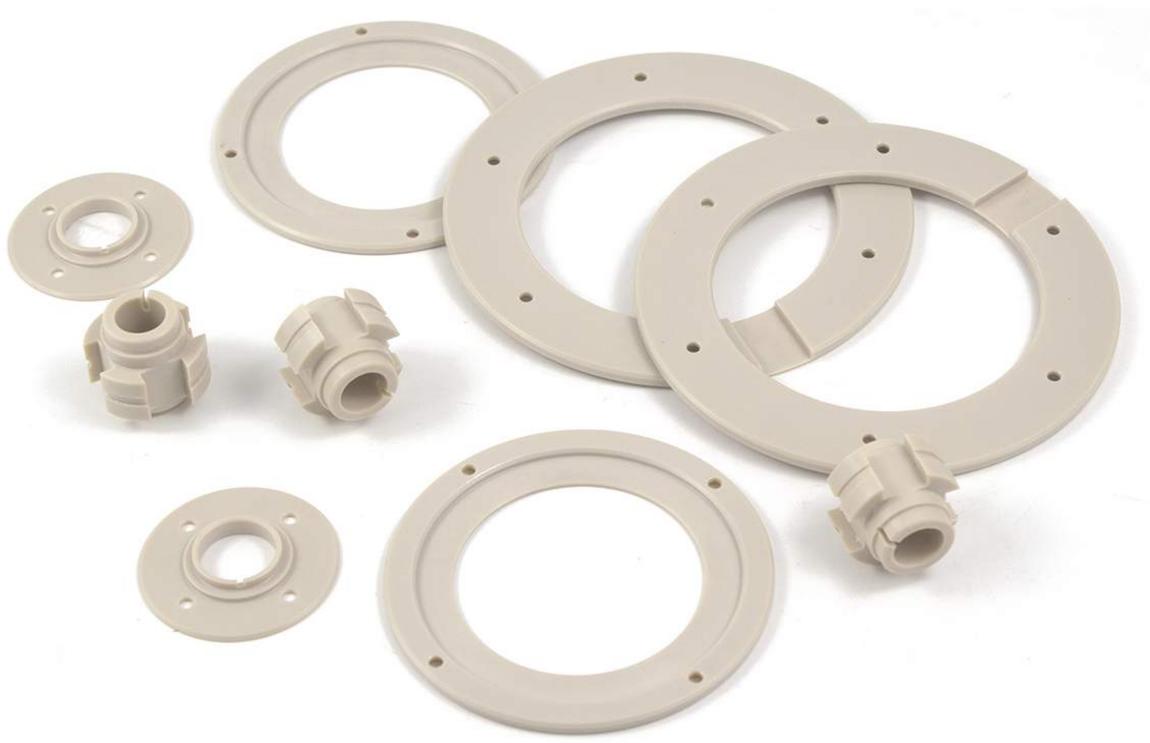


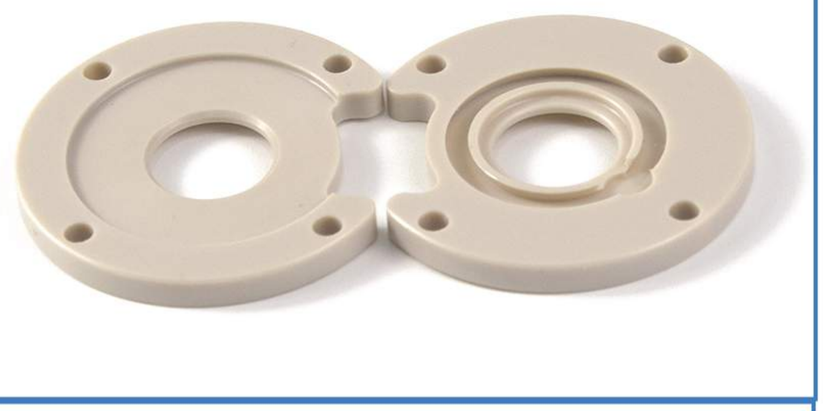
PEEK skeleton

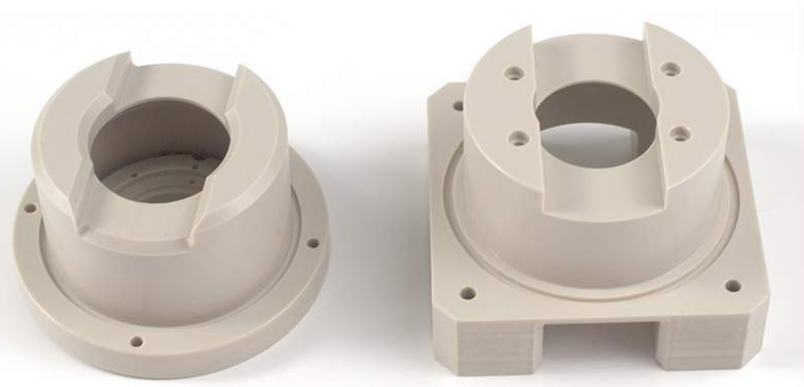
PEEK impeller

PEEK oil chamber ring

PEEK PRODUCTS

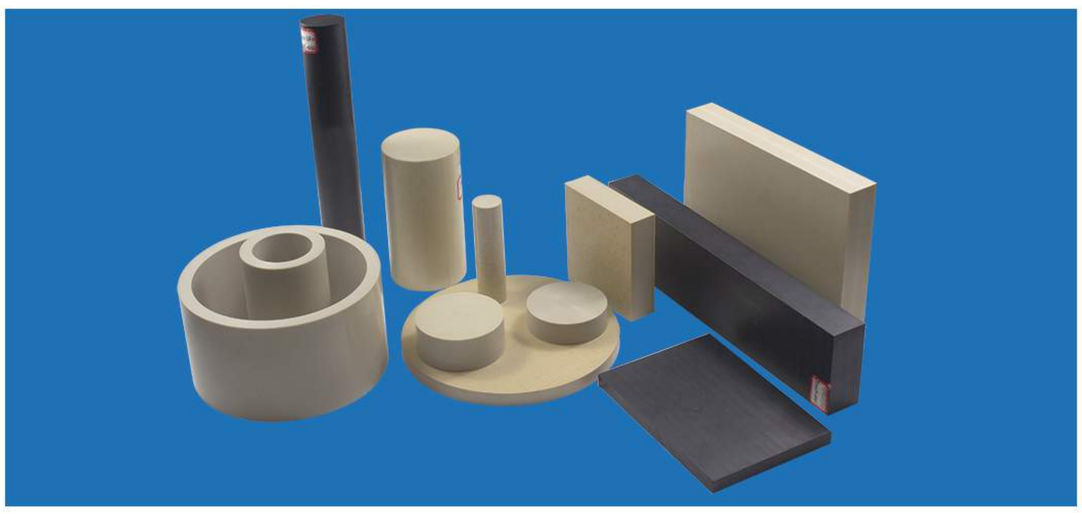






PEEK special-shaped parts

PEEK PERFORMANCE PARAMETER TABLE



PEEK is a special engineering plastic with excellent performance, which has more obvious advantages compared with other special engineering plastics, such as high temperature resistance of 260℃, excellent mechanical properties, good self-lubricating, chemical corrosion resistance, flame retardancy, Stripping resistance, wear resistance, strong nitric acid and concentrated sulfuric acid resistance, radiation resistance, super mechanical properties, etc., can be used in high-end machinery, nuclear engineering, petroleum and aviation and other high-tech fields.

PEEK is an aromatic crystalline thermoplastic polymer material with a melting point of 334℃, which has high mechanical strength, high temperature resistance, impact resistance, flame retardancy, acid and alkali resistance, hydrolysis resistance, wear resistance, fatigue resistance, radiation resistance and good electrical properties.

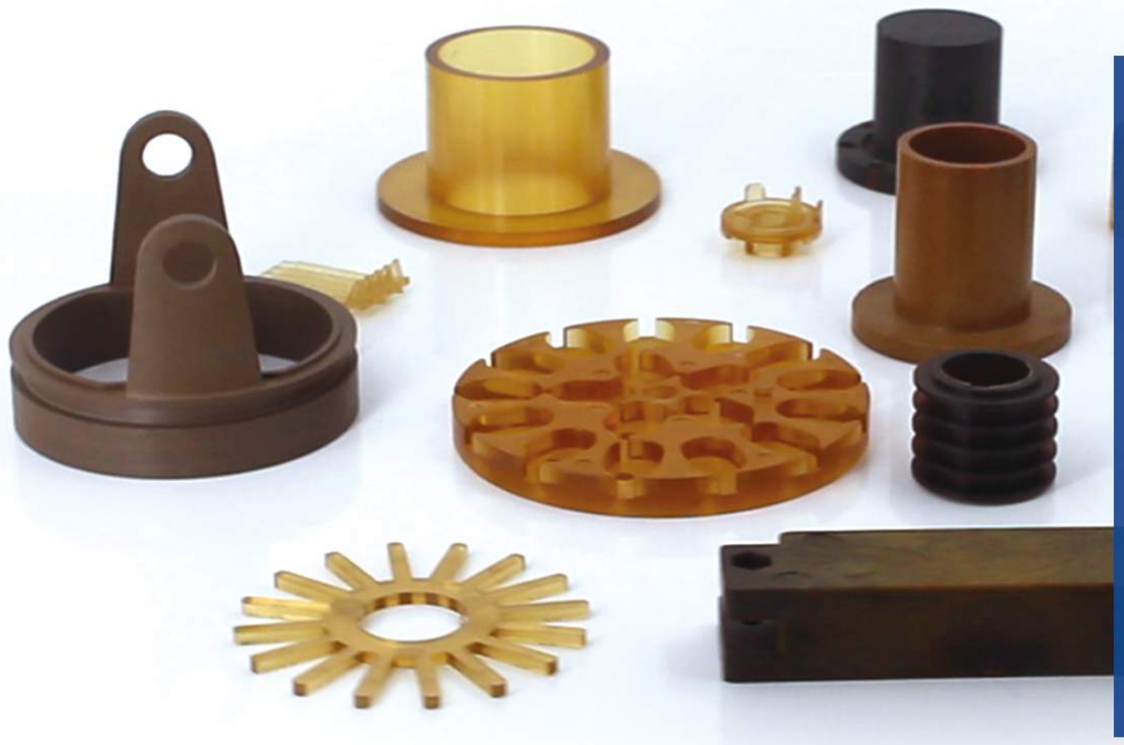
High temperature resistance	PEEK resin has high melting point (334℃) and glass transition temperature (143℃), the continuous service temperature is 260℃, and the load heat deformation temperature of its 30%GF or CF reinforced brand is as high as 316℃.
Mechanical properties	PEEK resin has good toughness and rigidity, and it has excellent fatigue resistance to alternating stress comparable to alloy materials.
Self-lubricity (corrosion resistance)	PEEK resin has excellent sliding characteristics, and is suitable for use under strict requirements on low friction coefficient and wear resistance.
Chemical resistance	Its corrosion resistance is similar to that of nickel steel. PEEK is only dissolved in concentrated sulfuric acid, which has good chemical resistance, especially more acid and alkali resistance than polyimide at high temperature.
Flame retardancy	PEEK resin is a very stable polymer, and the 1.45mm thick sample can reach the highest flame retardant standard without any flame retardant.
Irradiation resistance and peeling resistance	PEEK has good radiation resistance and peeling resistance, so it can be used to make electromagnetic wires for special purposes.
Fatigue resistance	PEEK resin has the best fatigue resistance among all resins.
Hydrolysis resistance	The products made of PEEK resin and its composite materials can still keep good performance when used continuously in high temperature and high pressure water.
Workability	PEEK resin has good fluidity and high thermal decomposition temperature at high temperature, and can be processed by injection molding, compression molding, extrusion molding, blow molding and melt spinning.
Insulation stability	PEEK has good electrical insulation performance and keeps it in a high temperature range. Its dielectric loss is also very small at high frequency.
Wear resistance	PEEK's good wear resistance is equivalent to polyimide.

PEEK PERFORMANCE PARAMETER TABLE

Test items	Test criteria	Test conditions	Units	NJSSPEEK-1000	NJSSPEEK-FC1030	NJSSPEEK-G1030	NJSSPEEK-C1030
				Pure resin	Carbon fiber + graphite + PTFE (10% each)	30% glass fiber	30% carbon fiber
Density	ISO1183	Crystal	g/cm^3	1.3	1.44	1.51	1.4
Water absorption rate (3.2mm thick tensile bar,	ISO62-1	24h, 23℃	%	0.07	0.06	0.04	0.04
		Balance, 23℃	%	0.4	0.3	0.4	0.3
Tensile strength	ISO527	Yield, 23℃	MPa	100	140	175	260
Elongation at break	ISO527	Fracture, 23℃	%	20	2.2	2.7	1.7
Bending strength	ISO178	Yield, 23℃	MPa	165	190	265	380
Bending modulus	ISO178	23℃	GPa	4.1	7.8	11.3	23
Compressive strength	ISO604	23℃	MPa	125	155	250	300
Impact strength of simply supported beam	ISO179/1eA	There is a gap	kJ/m^2	7	5	8	7
	ISO179/1U	No gap	kJ/m^2			55	45
Impact strength of cantilever beam	ISO180/A	There is a gap	kJ/m^2	7.5	5	10	9
	ISO180/U	No gap	kJ/m^2	–		60	45
Shore D hardness	ISO868	23℃		85	80	88	88
Melting point	ISO11357	–	℃	343	343	343	343
Glass transition temperature	ISO11357	Start	℃	143	143	143	143
Specific heat capacity	DSC	23℃	kJ/kg℃	2.2	1.7	1.7	1.8
Coefficient of thermalexpansion	ISO11359	Below Tg along the flow direction	ppm/K	45		18	5
		Below Tg along the flow direction	ppm/K	120		18	6
Heat distortion temperature	ISO75-f	1.8Mpa	℃	152	300	315	315
Thermal conductivity	ISO22007-4	23℃	W/mK	0.29	0.3	0.3	0.95
Dielectric strength	IEC60243-1	2mm	kV/mm	23		25	–
Dielectric constant	IEC60250	23℃,1KHz	–	3.1		3.2-3.4	–
		23℃,50Hz	–	3		–	–
Volume resistivity	IEC60093	23℃,1V	Ω·cm	10^{16}		10^{16}	10^5
		275℃	Ω·cm	10^9		–	–

PI PRODUCTS AND APPLICATIONS

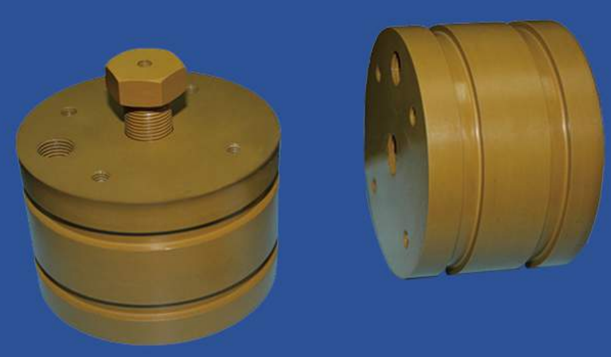
Polyimide PI has high and low temperature resistance (-269~400℃), high friction resistance, self-lubrication, high strength, high insulation, radiation resistance, corrosion resistance, Low thermal expansion coefficient, organic solvent resistance, self-extinguishing, non-toxic and other comprehensive properties. The long-term working temperature of some types of PI is above 350℃, and the short-term working temperature can reach 450℃. Is the engineering plastic with the best temperature resistance among engineering plastics at present. Its comprehensive performance is unmatched by other special engineering plastics, and it is praised as "an expert in solving problems" by the world. It is widely used in high-tech fields such as aviation, aerospace, machinery, electricity, atomic energy, microelectronics, thin film and liquid crystal display.



After years of market cultivation, polyimide has been used as sealing materials, structural materials, heat insulation materials, friction materials and high-temperature coatings in aerospace, military industry, automobiles, compressors, large motors, pumps, tobacco machinery, textile machinery, Construction machinery, office machinery, electronic products, mold industry, etc. are widely used as high temperature-resistant, wear-resistant, self-lubricating or sealing parts, and have won high praise from users.

Military industry field

Aerospace field



INTRODUCTION TO PI PERFORMANCE

Nanjing Yuwei New Material Co., Ltdcan provide super high temperature resistant special engineering plastic-polyimide profiles with temperature resistance grades above 220℃,260℃, 300℃ and 350℃ according to the specific needs of customers, such as rods, sheets, tubes, injection molding and machined products. Polyimide can be compounded with molybdenum disulfide, graphite, carbon fiber, polytetrafluoroethylene, etc., which can greatly change the mechanical strength, self-lubricating and wear-resisting properties of materials. Our company can tailor the materials with different formulas according to the different requirements of customers' products.

Polyimide is classified from the temperature resistance level:

NJSSPI-1008: The long-term working temperature is about 220℃, and the short-term working temperature can reach 300℃,which can be used for hot molding, cold pressing sintering, injection molding and other molding processes, and can also be made into high-temperature adhesive for insulation, high-temperature coating and other fields.

NJSSPI-1006: The long-term working temperature is about 260℃,which can be used for hot molding, cold pressing sintering, injection molding and other molding processes, and can also be made into high-temperature adhesive for insulation, high-temperature coating and other fields.

NJSSPI-1007: The long-term working temperature is about 300℃,which can be used for hot molding, cold pressing sintering, injection molding and other molding processes, and can also be made into high-temperature adhesive for insulation, high-temperature coating and other fields.

NJSSPI-1003: The long-term working temperature is above 350℃ and the short-term working temperature can reach 450℃. It can be molded by hot pressing and cold pressing sintering, and can also be made into high-temperature adhesive.

Polyimide from the product form classification:

Molded profiles: rods, sheets and tubes of hundreds of specifications, and profiles of different specifications can be customized according to customers' needs.

Polyimide rod
Polyimide sheet
Polyimide tube

Acting for DuPont VESPEL polyimide rods, sheets and products.

Injection molded and machined products:

According to the customer's order requirements, various polyimide products can be injection molded, and finished products can be machined.

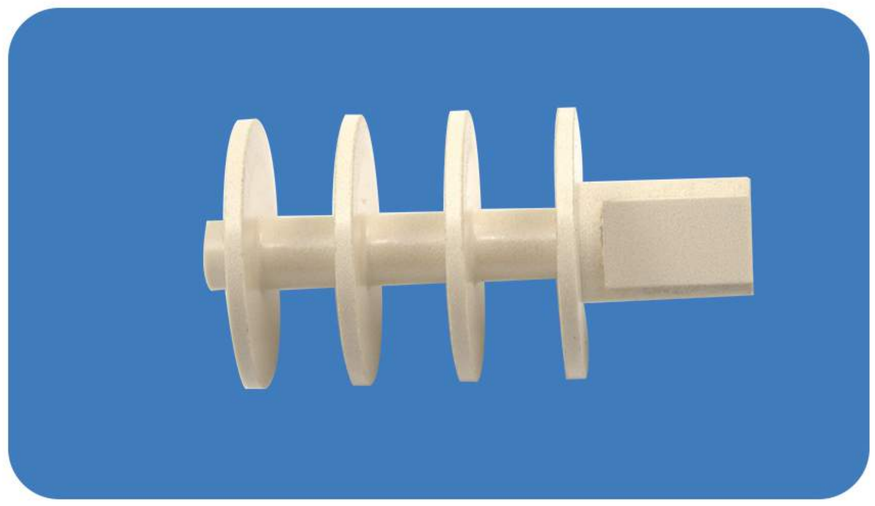
PI PARAMETER TABLE

Product name		NJSSPI-1003	NJSSPI-1006	NJSSPI-1007	NJSSPI-1008
Project	Units	Test data			
Density	g/cm^3	1.45	1.40	1.40	1.30
Heat distortion temperature	℃	380	260	300	220
Coefficient of thermal expansion	/℃	5×10^{-5}	2×10^{-5}	5×10^{-5}	5×10^{-5}
Tensile strength	MPa	62. 24	95. 00	127. 00	110. 00
Elongation at break	%	4.91	7.00	6.20	10.00
Bending strength	MPa	149.00	150.00	94.00	125.00
Bending modulus	GPa	3.00	3.00	2.34	2.50
Compressive strength	MPa	136.50	120.00	162.00	100.00
Coefficient of friction	–	0.25–0.35	0.25–0.35	0.25–0.35	0.25–0.35
Dielectric strength	KV/mm		400.00	134.00	180.00
Dielectric constant	–	2.8–3.4	3.0–3.2	2.8–3.4	3.0
Surface resistivity	Ω	10^{15}	10^{14}	2.6×10^{15}	10^{15}
Volume resistivity	Ω.cm	10^{16}	10^{16}	6.7×10^{15}	10^{16}
Hardness (shore D)	HD	85	85	85	85
Notched impact strength	kJ/m^2	19.00	25.00	12.00	20.00
Water absorption		≤0.3	≤0.3	≤0.3	≤0.3
Low temperature resistance		–248.00	–248.00	–248.00	–248.00

OTHER ENGINEERING PLASTICS

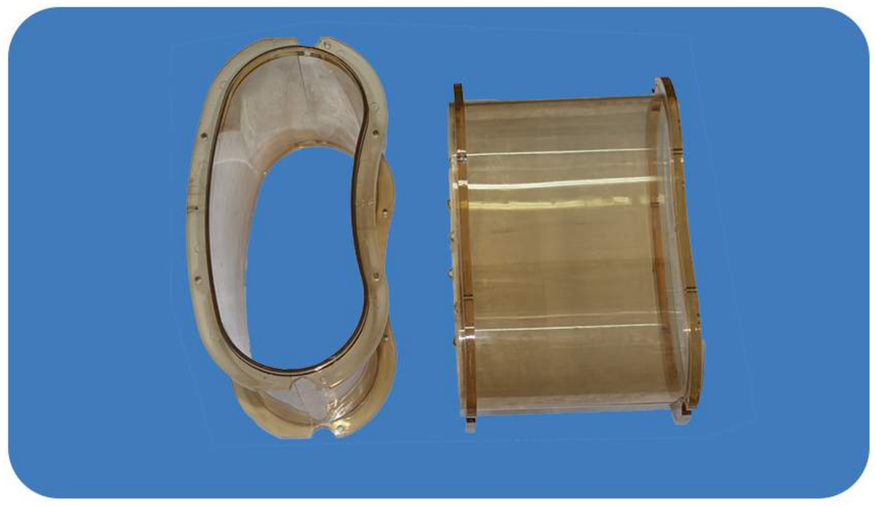
In addition to producing PEEK and PI products, our company also provides other special engineering plastic profiles and products with heat resistance above 200℃. The main varieties are polyphenylene sulfide PPS, polysulfone PSU (PSF), Composite modified materials of polyetherimide PEI, polyethersulfone PES, polyamideimide PAI, polybenzimidazole PBI and special plastics.

PPS

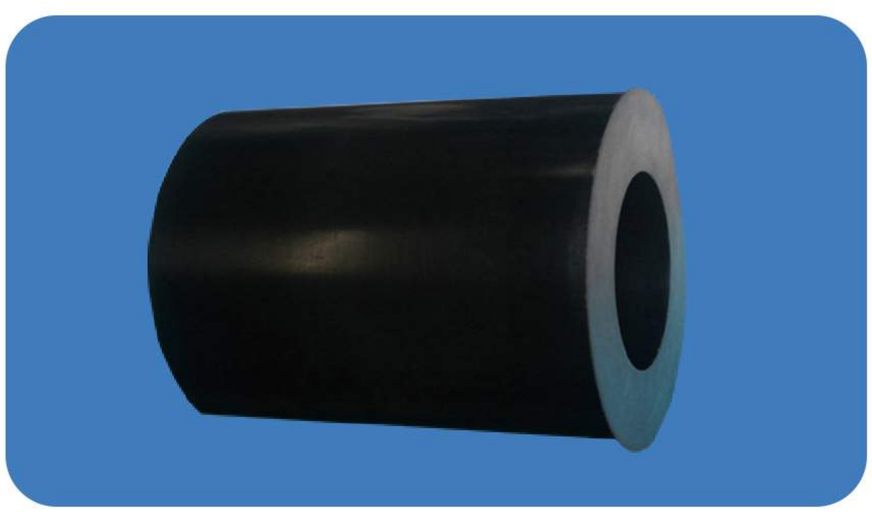


PPS

PEI



PSU



PBI

Dissolvable Frac Ball

PARAMETER TABLE OF OTHER ENGINEERING PLASTICS

Product name		PPS	PEI	PAI	PSU	PES
Project	Units	Test data				
Density	Kg/m^3	1430	1270	1450	1240	1370
Water absorption:						
Soak in water at 23℃ for 24 hours	%	0.01/0.03	0.26/0.54	0.21/–		
In 23℃/50%RH air	%	0.03	0.75	1.9	0.2	0.6
Soak in water at 23℃	%	0.09	1.35	3.5	0.8	2
Thermal performance:						
Melting point	℃	280	NA	NA	NA	NA
Thermal conductivity at 23℃	W/(K.m)	0.3	0.22	0.54	0.25	0.18
Coefficient of thermal expansion of cable:						
Average value between 23–100℃	m/(m.k)	50×10^{-6}	45×10^{-6}	25×10^{-6}	56×10^{-6}	55×10^{-6}
Average value between 23–150℃	m/(m.k)	60×10^{-6}	45×10^{-6}	25×10^{-6}		
Average value above 150℃	m/(m.k)	80×10^{-6}	45×10^{-6}	25×10^{-6}		
Maximum allowable working temperature in air:						
Short time	℃	260	200	270	180	220
Continuous: At least 20,000	℃	220	170	250	160	190
Combustibility: “Oxygen index”						
According to UL94(1.5/3mm thick)	%	47	47	44	V0	V0
Mechanical properties at 23℃:						
Applied experiment:						
Bending tensile stress/breaking tensile stress	MPa	/75	105/–	/80	80	90
Tensile stress at break	%	5	10	5	6.5	50
Tensile modulus of elasticity	MPa	3700	3400	5800	2600	2700
Compression experiment:						
Compressive stress at 1% normal strain	MPa	28	25	31	22	20
Compressive stress at 2% normal strain	MPa	55	49	58		

PRODUCTION EQUIPMENT AND PRODUCTION EQUIPMENT

Building 18, Kecheng Science Park, No. 19, Lanhua Road, Pukou Economic Development Zone, Nanjing
Tel：+86-25-85958590
Fax：+86-25-85698929
Web：www.chinaywpeek.com
E-mail：yw@njsspeek.com

YUWEI

Professional PEEK
extrusion production enterprise