PEEK

The material of the future
for highest demands

ZYPEEK

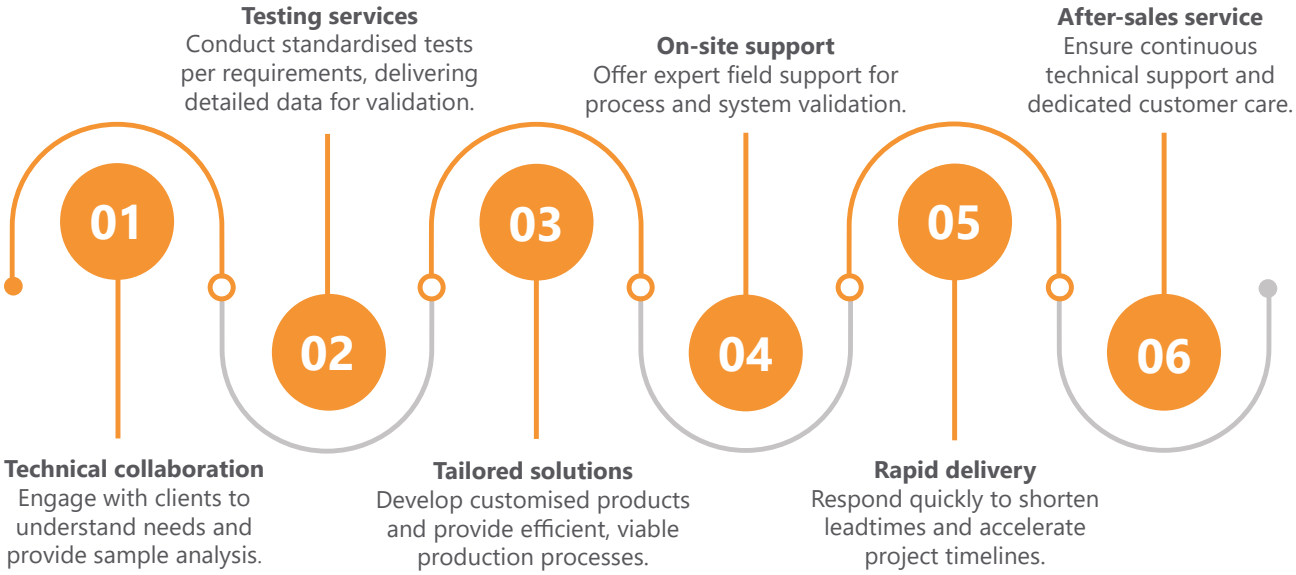
K.D. FEDDERSEN
DISTRIBUTION

PEEK: The material of the future for highest demands

PEEK is an outstanding, linear aromatic, semi, crystalline high-performance plastic, considered one of the world´s best-performing thermoplastics. **PEEK** is the material of choice for metal replacement and lightweighting applications. It is known for its comprehensive properties that surpass most special engineering plastics, particularly in terms of rigidity and toughness, as well as excellent heat resistance, wear resistance, self-lubrication, corrosion resistance and processing flexibility.

K.D. Fedderen Distribution offers access to high-quality **PEEK** solutions, backed by decades of expertise and experience in polymer science and application engineering from **ZYPEEK**. From polymer research and production to the manufacturing of intermediate and customised profiles, **ZYPEEK** controls the entire lifecycle with tailored and application-focused comprehensive solutions.

ZYPEEK is recognised as China´s first listed **PEEK** pioneer continually advancing high-performance **PEEK** grades and engineered parts.

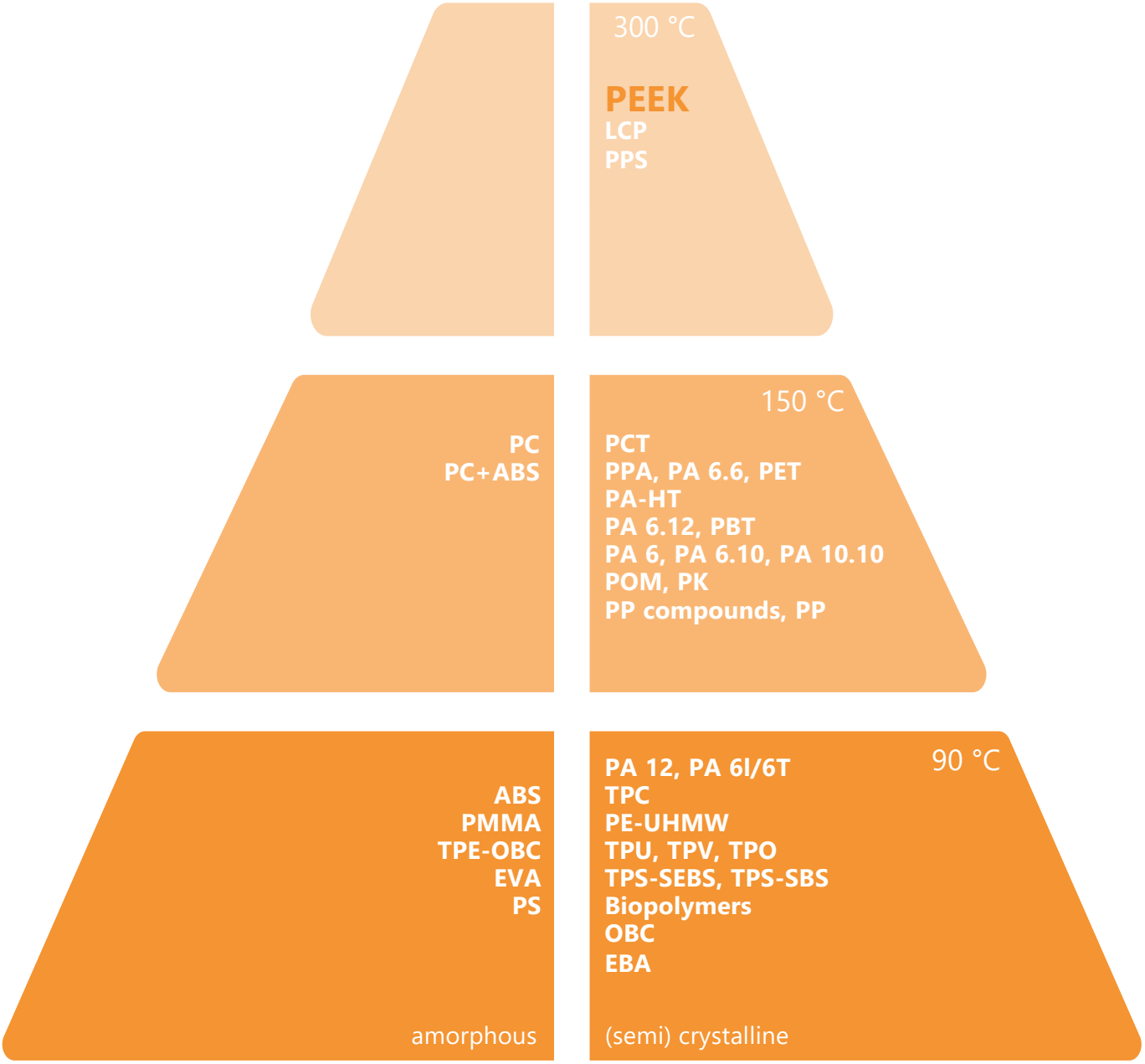


Certified quality: Our partner **ZYPEEK** is certified to the highest quality standards, including ISO 9001, IATF 16949 (automotive industry), ISO 13485 (medical devices), as well as FDA 21 CFR 177.2415 and EU 10/2011 for food contact. Furthermore, the products comply with important environmental and safety norms such as REACH, K-REACH, RoHS, and UL94 V-0. This ensures that **ZYPEEK** solutions meet the stringent regulatory requirements of the European market, making them a safe and compliant choice for your applications.

Research & Development: With 33 national and 2 international patents, and participation in the formulation of multiple national standards, **ZYPEEK** is the leader in **PEEK** development. The R&D investment accounted for 14.38 % of operating revenue in 2025 H1, showcasing a strong commitment to innovation. **ZYPEEK** have completed nearly 10,000 **PEEK** experiments.

Sustainability: ZYPEEK is committed to environmentally friendly solutions and research the development of innovative recycling technologies for **PEEK**. This includes exploring recycling of chemical ingredients in the production process and raw materials.

Your advantage K.D. Feddersen Distibution: As your European partner, we provide access to these globally recognised, high-quality **PEEK** solutions. Benefit from our comprehensive consultation, technical support, and tailored material solutions. We are your competent partner for **ZYPEEK** – from the initial idea to series production.



Unrivaled performance: The core advantages of PEEK

Extreme temperature resistance: **PEEK** can be continuously used in a temperature range from -60 °C to 260 °C, maintaining excellent dimensional stability even at short-term temperatures up to 300 °C.

Excellent mechanical properties: **PEEK** achieves an E-modulus of up to 3.6 GPa, which can even approach metals after reinforcement (e.g., with 30 % carbon fibre 15-20 GPa). It offers a unique combination of stiffness and toughness, as well as outstanding fatigue resistance under cyclic loads.

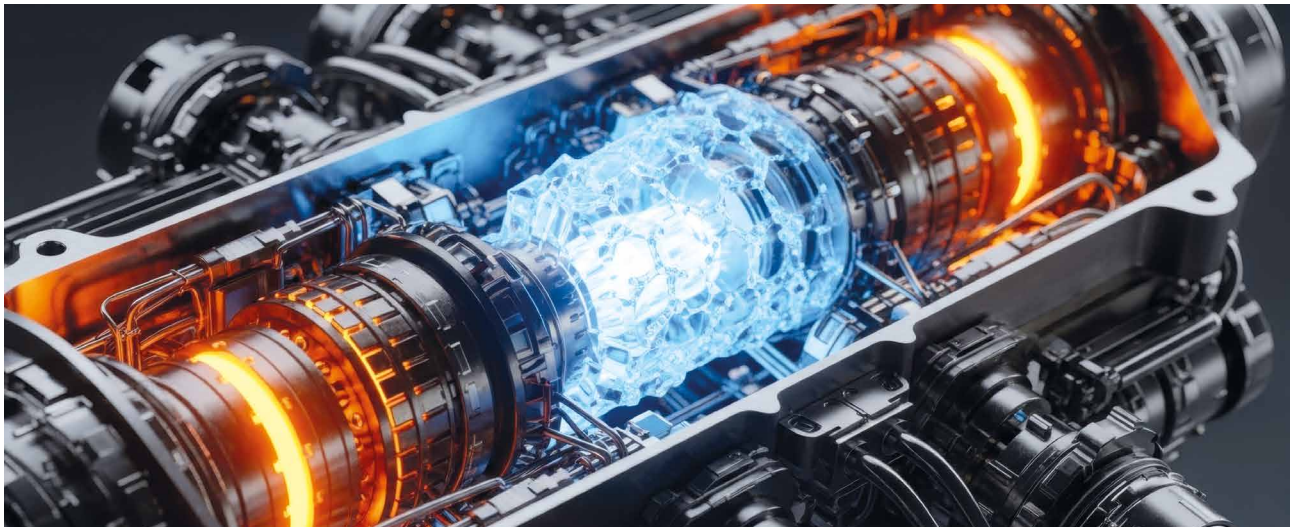
Outstanding wear resistance & self-lubrication: Modified **PEEK**, in particular, exhibits excellent sliding properties and a low coefficient of friction, leading to significantly longer service life and reduced maintenance.

Lightweighting potential: With a density of 1.3 g/cm^3, **PEEK** is up to 70 % lighter than metal components, leading to energy savings and improved response speed.

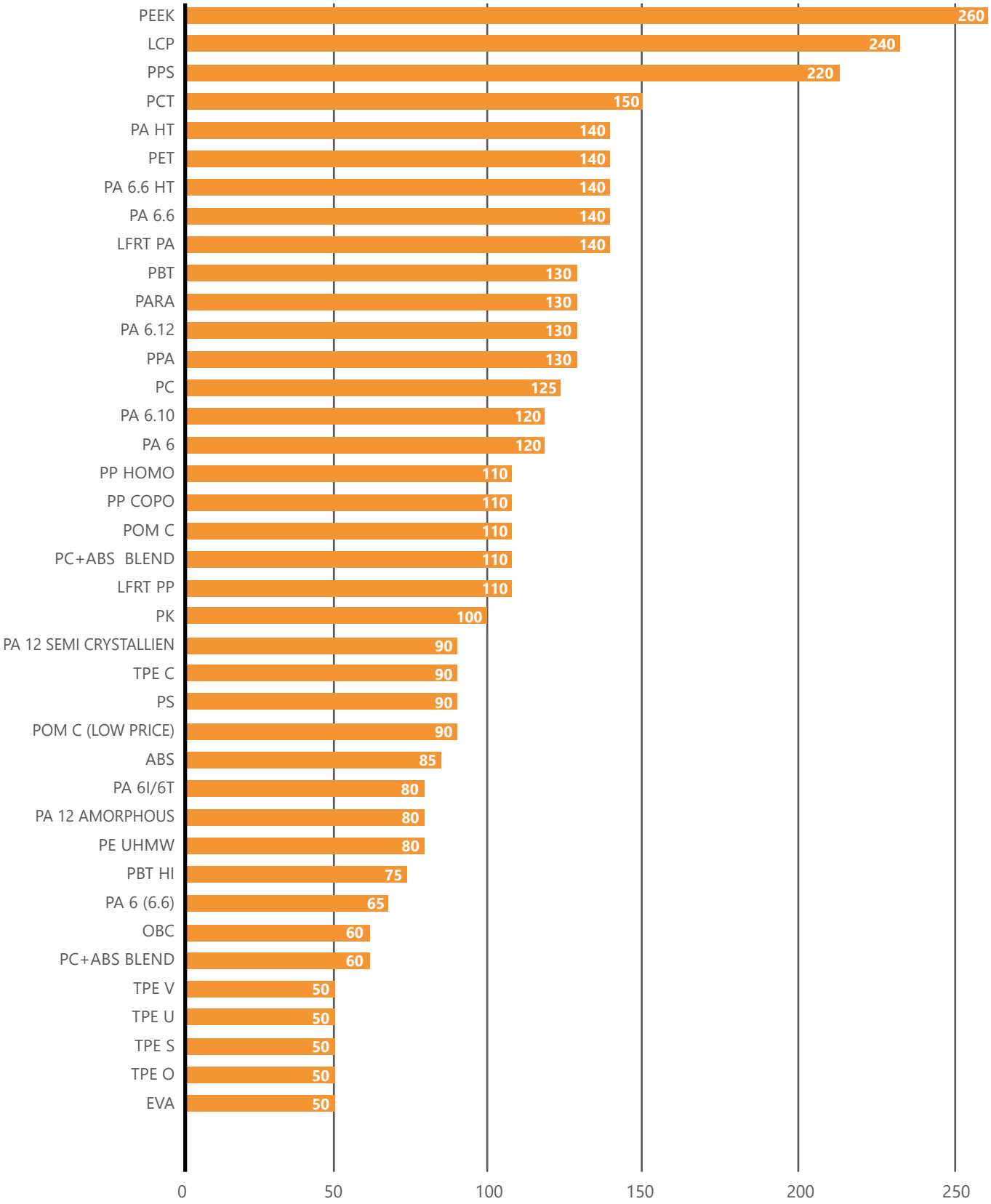
Chemical and hydrolysis resistance: **PEEK** is resistant to a wide range of chemicals, acids, alkalis, oils, and solvents, as well as hydrolysis, even in steam at high temperatures and pressures.

Excellent electrical insulation: It possesses superior electrical insulation properties, a very high dielectric strength, and low dielectric losses at high frequencies. Electrical properties remain stable even after gamma / X-ray irradiation.

Flame retardancy: **PEEK** is self-extinguishing and meets the UL94 V-0 standard without flame retardants, with the lowest smoke emission among plastics.



UL RTI (strength@20,000 h)
Temperatures: K.D. Feddersen portfolio



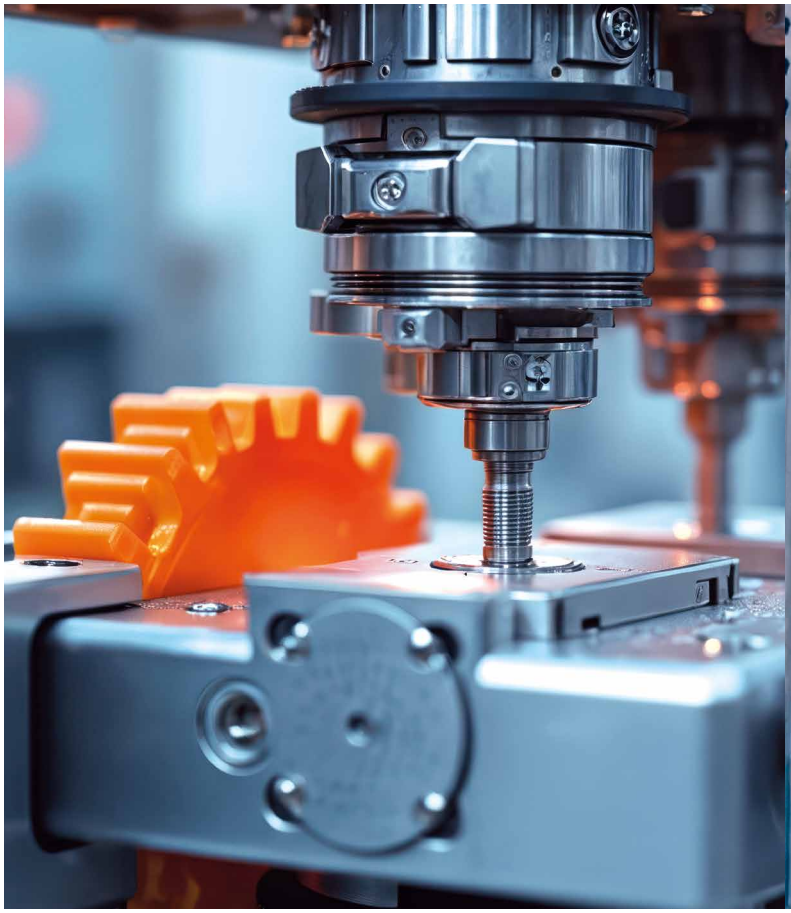
PEEK in the automotive industry: Innovation for tomorrow´s mobility

PEEK is the ideal material to support the lightweight trend in the automotive industry and enhance the efficiency of electric vehicles. Its mechanical strength, dynamic fatigue resistance, high-temperature resistance, creep resistance, self-lubrication and a coefficient of thermal expansion comparable to metal make it a perfect metal replacement. The automotive industry increasingly demands environmentally friendly material, higher system integration, cost reduction, NVH reduction, higher safety standards, lower energy consumption, electrification and automation, all of which **PEEK** addresses.

Drivetrain: Clutch forks, thrust washers, balance shaft gears, and steel-backed bearings benefit from **PEEK's** wear resistance, weight reduction, and high stiffness.

Engine & Thermal Management Systems (TMS): In hairpin insulating films, motor slot insulating paper, and axial motor sealing systems, **PEEK** enables miniaturisation while maintaining power density and improves electrical insulation and dielectric strength.

Cockpit systems: Components like seat rail worms, stopper driveline caps, and audio system damping bushings leverage **PEEK's** self-lubrication, high damping, and lightweight properties for smoother operation, reduced NVH, and enhanced acoustic comfort.



PEEK in other key industries & tailored solutions

Due to its unique properties, **PEEK** is indispensable in numerous other industries. **ZYPEEK** empowers customers across automotive, electronics, energy, power, medical, aerospace, robotics and low-altitude economy delivering reliable, sustainable and future-ready solutions that meet the world's tough material challenges every day.

Aerospace: Excellent temperature, salt spray and corrosion resistance, combined with low specific gravity and flame retardancy, make **PEEK** a preferred material for radomes, landing gear hub caps, cable ties and sealing plates.

Energy: From oil and gas exploration to solar and wind energy, **PEEK** offers stability under high pressures, high temperatures and radiation, minimising failure risks. Applications include drilling rod guides, underwater sensors and high-voltage insulation seals.

Electronics & semiconductors: High heat resistance and excellent electrical insulation are crucial, e.g., for wafer carriers and cable insulation, which remain stable even under high frequency conditions.

Mechanical applications: PEEK is ideal for wear-resistant and lubrication-free parts such as bushings, bearings, sealing rings and gears, contributing to weight and noise reduction and extending service life.

Tailored PEEK solutions: We offer a wide range of **PEEK** products, realised through various processing methods such as injection moulding, extrusion, filming, coating and 3D printing. From high-precision granules (e.g., antistatic, coloured, ceramic-modified) – we deliver batch-stable solutions according to your needs.

Product catalogue FD-PEEK		Grades
UPF/PF series	Pure resin ultrafine powder	330UPF
	Pure resin fine powder	330PF
		550PF
		770PF
P series	Pure resin powder	330P
		550P
		770P
G series	Pure resin granules	330G(H)
		550G
		551G
		551LG
		770G(H)
GL series	Glass fibre reinforced	330GL(10-35)(H)
		550GL(10-35) (H)
		770GL(10-35) (H)
CA series	Carbon fibre reinforced	330CA(10–35)
		550CA(10–35)
		770CA(10–35)
FC series	PTFE + carbon fibre + graphite reinforced	330FC30
		550FC30
		770FC30
Application product series	Ceramic modified	330CM(10–30)
		550CM(10–30)
		770CM(10–30)
	E-cigarette grade	550EC F01
		330EC F01
		330G–U
		330G–T
		550G–U
		550G–T
	PEEK coloured	YF
	Specialised PEEK products for wafer carrier	310WA251
		310WA252
		310WA253
		310WA254
	Anti-static grade	ESD E01
		ESD E02
		ESD P01
		ESD P02
	Implantable grade PEEK	PEEK-LISCIEX ZR3G
		PEEK-LISCIEX ZR7G
		PEEK-LISCIEX ZR7
		PEEK-LISCIEX ZR7

Flow	Process methods
High	Coating, additives
High	3D printing, additives
Medium	Compression moulding
Standard	
High	Compounding, raw materials for grinding fine powder
Medium	
Standard	
High	Injection moulding for complex thin-wall parts
Medium	Injection moulding, extrusion
Medium	Ultra-pure, ultra-filtered, for medical applications
Medium	Ultra-pure, ultra-filtered, for superior wire & cables and other special applications
Standard	Injection moulding, extrusion
High	Injection moulding, extrusion
Medium	
Standard	
High	Injection moulding, extrusion
Medium	
Standard	
High	Injection moulding, extrusion
Medium	
Standard	
High	Injection moulding, extrusion
Medium	
Standard	
Medium	Injection moulding, extrusion
High	
High	
High	
Medium	
Medium	
Standard/Medium/ High	Injection moulding, extrusion
Medium	Injection moulding, extrusion
Medium	
Medium	
Medium	
Standard	Extrusion
Standard	
Standard	Compression moulding
Standard	
High	Injection moulding, extrusion
Standard	
-	Machining
-	

Product TDS

Material properties	Test method	Conditions	Units	PEEK pure resin				Friction a. w
				770G	551G	550G	330G	330FC30
Mechanical data								
Tensile strength	ISO 527	23 °C break	MPa	-	-	-	-	150
		23 °C yield	MPa	100	100	100	110	-
Tensile elongation	ISO 527	23 °C break	%	45	40	40	25	2
Flexural strength	ISO 178	23 °C break	MPa	-	-	-	-	220
		23 °C yield	MPa	165	170	170	175	-
Flexural modulus	ISO 178	23 °C	GPa	4.1	4.2	4.2	4.3	11.5
Compressive strength	ISO 604	23 °C	MPa	125	125	125	130	170
Charpy impact strength	ISO 179/1eA	Notched	kJ/m	7	6	6	4	4
	ISO 179/1U	Unnotched	kJ/m	7	-	-	-	30
Izod impact strength	ISO 180/A	Notched	kJ/m	0.5	6.5	6.5	5	5
	ISO 180/U	Unnotched	kJ/m	-	-	-	-	30
Mould shrinkage	ISO 294-4	Along flow	%	1	1	1	1	0.3
		Across flow	%	1.3	1.3	1.3	1.3	0.7
Thermal data								
Melting point	ISO 11357	-	°C	343	343	343	343	343
Glass transition (Tg)	ISO 11357	Onset	°C	143	143	143	143	143
Coefficient of thermal expansion	ISO 11359	Tg Along flow below Tg	ppm/K	45	45	45	50	12
		Tg Along flow above Tg	ppm/K	120	120	120	120	15
Heat deflection temperature	ISO 75A-f	1.8MPa	°C	52	152	152	156	315
Thermal conductivity	ASTM C177	23 °C	W/mK	0.29	0.29	0.29	0.29	0.87
Flow								
Melt index	ISO 1133	380 °C, 5kg	g/10min	10	14	20	80	14
Miscellaneous								
Density	ISO 1183	23 °C	g/cm	0.3	1.3	1.3	1.3	1.45
Shore D Hardness	ISO 868	23 °C	-	85	85	85	85	83
"Water absorption (3.2mm thick tensile bar)"	ISO 62-1	24h, 23 °C	%	0.07	0.07	0.07	0.07	0.04
(by immersion)		Equilibrium 23 °C	%	0.4	0.4	0.4	0.4	0.3
Electrical data								
Dielectric strength	IEC 60243-1	2mm	kV/mm	16	16	16	16	-
Comparative tracking index	IEC 60112	23 °C	V	150	150	150	150	-
Dielectric constant	IEC 62631	23 °C, 1kHz	-	3.1	3.2	3.2	3.2	-
Loss tangent	IEC 62631	23 °C, 1MHz	-	0.004	0.003	0.003	0.004	-
Volume resistivity	IEC 62631	23 °C	Q·m	1.00E+14	1.00E+14	1.00E+14	1.00E+14	1,00E+06

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ear resistant	Carbon fibre reinforced					Glas fibre reinforced					
770FC30	770CA30	550CA30	330CA30	550CA20	330CA20	770GL30	550GL30	330GL30	770GL20	550GL20	330GL20
140	260	250	250	205	205	175	175	185	155	155	145
-	-	-	-	-	-	-	-	-	-	-	-
2.2	1.7	1.6	1.5	2	1.9	2.7	2.7	2.5	3.3	3.3	2.4
230	380	370	360	310	300	265	265	275	245	245	235
-	-	-	-	-		-	-	-	-	-	-
11.5	23	22	21	16	15	11.3	11.3	11.5	8.8	8.8	8.5
170	300	300	300	-	-	250	250	250	-	-	-
5	7	7	6	7	6	8	8	7.5	7	7	6
35	45	45	40	45	40	55	55	50	45	45	35
6	9	9	8	8	7	10	10	9	7.5	7.5	7
35	45	45	40	40	35	60	60	50	60	60	35
0.3	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
0.7	0.5	0.5	0.5	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
343	343	343	343	343	343	343	343	343	343	343	343
143	143	143	143	143	143	143	143	143	143	143	143
15	5	5	5	8	8	18	18	20	20	20	25
20	6	6	6	8	8	18	18	20	22	22	25
315	336	336	339	325	325	328	328	335	315	315	323
0.87	0.95	0.95	0.95	0.95	0.95	0.3	0.3	0.3	0.3	0.3	0.3
2.5	2.3	5	27	7	31	4.5	6	28	6.5	11	40
1.45	1.4	1.4	1.4	1.37	1.37	1.51	1.51	1.52	1.43	1.43	1.43
83	88	88	88	86	86	88	88	87	86	86	86
0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.05
0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4
-	-	-	-	-	-	20	20	17	18	18	16
-	-	-	-	-	-	150	150	150	150	150	150
-	-	-	-	-	-	3.2	3.2	3.3	3.1	3.1	3.2
-	-	-	-	-	-	0.005	0.005	0.004	0.05	0.05	0.04
1.00E+08	1.00E+03	1.00E+03	1.00E+03	1.00E+05	1.00E+05	1.00E+14	1.00E+14	1.00E+14	1.00E+14	1.00E+14	1.00E+14

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