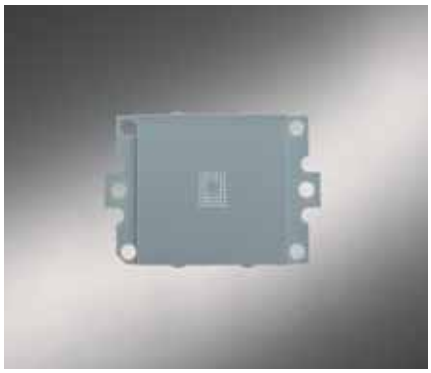
TECAPEEK CMF and TECAPEEK TS
Test Sockets of the Highest Precision

The finest structures can be realised in TECAPEEK CMF with very low burring.



The next generation test sockets made of TECAPEEK TS.

Excellent machinability due to high toughness.

The continuing reduction of component sizes in semiconductor production has placed increasing demands on materials of a new generation.

Marketed under the name of **TECAPEEK CMF,** ENSINGER offers a composite of PEEK and a technical ceramic: outstanding hardness and rigidity is combined with good toughness at long-term temperatures of up to 260 °C. Excellent dimensional stability supports very close tolerances. TECAPEEK CMF is available in white or in grey colour on request.

TECAPEEK TS offers the second generation property profile for test socket applications: improved hardness combined with good toughness to create the necessary creep strength in the application and support a long life time. These properties are reflected by an excellent machinability with low burrs even with the finest structures. A high dimensional stability is given over a wide temperature range. Due to the extrusion technology, homogeneity is given in the whole stock shape so that finest parts can be taken at any position throughout the plate. Snow reflections in imaging systems are reduced due to the blue-grey colour and a very good contrast can be achieved with laser marking.

Properties

- Very good hardness and rigidity
- Good machinability, very low burring
- Outstanding thermal stability
- Good dimensional stability
- Low water absorption
- Good corrosion resistance
- High thermal resistance

Preferred fields

Semiconductor industry, high precision mechanical engineering, electrical technology, vacuum technology

Applications

Test sockets and components for test sockets, contact plates, pressure bars, plug connectors, lamp holders

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Property Values		TECAPEEK CMF	TECAPEEK TS
DIN abbreviation		PEEK	PEEK
Density (ASTM D 792, DIN 53 479)	ρ g/cm³	1,64	1,49
Tensile strength at break (DIN EN ISO 527)	σ_R MPa	103	115
Elongation at break (DIN EN ISO 527)	ε_R %	4,0	3,5
Modulus of elasticity after tensile test (DIN EN ISO 527)	E_Z MPa	5500	5900
Modulus of elasticity after flexural test (DIN EN ISO 178)	E_B MPa	5300	6050
Compressive strength @ 1% deformation (DIN EN ISO 604)	σ_R MPa	23	19
Compressive strength @ 10% deformation (DIN EN ISO 604)	σ_R MPa	160	166
Compressive Modulus (DIN EN ISO 604)	E_B MPa	3900	4300
Impact strength (Charpy: DIN EN ISO 179/1eU)	a_{cU} kJ/m²	70	60
Ball indentation hardness (DIN EN ISO 2039 Part 1)	H_K N/mm²	258	295
Heat distortion temperature (DIN EN ISO 75, method A)	°C	219	230
Service temperature long term short term	°C °C	260 300	260 300
Coefficient of linear thermal expansion (23-100 °C, ISO 11359)	10^{-5} 1/K	4,4	3,7
Volume resistance (ASTM D 257, EC 93, DIN IEC 60093)	ρ_D Ωcm	>10^{14}	>10^{14}
Surface resistance (1) (ASTM D 257, EC 93, DIN IEC 60093)	R_O Ω	>10^{14} (1)	>10^{14}
Water absorption (23 °C/24h, DIN EN ISO62)	%	0,04	0,07
Flammability acc. to UL (no UL rec.)		V0	V0

Testing on semi-finished products.
(1) Valid for TECAPEEK CMF white, for TECAPEEK CMF grey: 10^{13} Ω

The foregoing information corresponds with current knowledge and indicates our products and possilbe applications. We cannot give you a legally binding guarantee of the physical properties or the suitability for a specific application. Existing commercial patents are to be taken in account.

Please find information concerning the exclusion of liability and Terms and Conditions of Delivery in our Semi-finished products catalogue or at www.ensinger-online.com.

Availability

Rods

DIN-Abbreviation	Tolerance (mm)	TECAPEEK CMF	TECAPEEK TS
Density (g/cm³)		PEEK	PEEK
Diameter Ø (mm)		1,64	1,49
		kg/m	kg/m
20	+ 0,2 + 1,1	0,560	0,509

Plates

DIN-Abbreviation	Tolerance (mm)	TECAPEEK CMF	TECAPEEK TS
Density (g/cm³)		PEEK	PEEK
Diameter Ø (mm)		1,64	1,49
		kg/m	kg/m
6 x 500	+ 0,2 +0,7	5,56	5,05
10 x 500	+ 0,2 +0,9	9,09	8,26
20 x 500	+0,3 +1,5	18,01	16,36

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