

FEATURES

- Resistance to harsh chemicals including wide range of acids and base
- High performance in hydrocarbons (natural gas and fuels) and organic solvents
- Resistance to hydrolysis (chemical breakdown in water) with a low water absorption and permeability
- High creep resistance (creep is the tendency of a solid material to move slowly or deform permanently under the influence of mechanical stresses)
- Resistant to stream, water and sea water
- High mechanical and tensile strength
- High stress cracking resistance
- Excellent slide and wear properties
- Good electrical insulation properties

Beige Plastic Sheet, 500mm x 50mm x 20mm

RS Stock No.: 129-842



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Product Description

From RS Pro a range of high-quality PEEK polymer solid plastic sheets available in a range of sizes and thicknesses

General Specifications

Form	Solid
Colour	Beige
Material	PEEK
Laminated	Yes
Laminated Material	Acrylic; Epoxy Resin; Fine Weave Cotton; Glass Fibre
Flammability Rating	UL 94 V-0
Polymer Type	Copolymer; Homopolymer
Finish	Mirror
Adhesive Backing	Yes
Applications	Components that can be manufactured from this plastic include the following: Friction bearings, Piston Parts, Pump housings and metering pumps, Bushes, Compressor plate valves, Cable Insulation, Light mountings, Ball valve seals, Wafer supports, Plug parts

Electrical Specifications

Specific Surface Resistance	$10^{14} \Omega$
Specific Volume Resistance	$10^{14} \Omega \cdot \text{cm}$
Dielectric Constant	2.9
Dielectric Loss Factor	0.0017tg
Breakdown Voltage	17kV/mm

Mechanical Specifications

Length	500mm
Width	50mm
Thickness	16mm
Density	1.32g/cm ³
Tensile Strength	95MPa
Hardness	M 99 Rockwell
Water absorption	0.5%
Thermal Conductivity	0.17W/m.K
Elongation	25%
Impact Strength	12kJM ⁻²
Modulus Of Elasticity	4200MPa
Flexural Strength	175MPa
Compression Strength	23MPa
Compression Modulus	3400MPa
Ball Indentation Hardness	253MPa
Thermal Expansion	5x10 ⁻⁵ k ⁻¹
Specific Heat	1.1J/(g.K)
Specific Gravity	1.38
Flexural Modulus	2600MPa
Friction Coefficient	0.54
Poisson Ratio	0.38kJM ⁻²

Operation Environment Specifications

Maximum Operating Temperature	300°C
Melting Point	255°C
Glass Transition Temperature	150°C
Vicat Softening Point	65°C

Approvals

Compliance/Certifications	CE / UR / cUR
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PEEK

Chemical Designation PEEK (Polyetheretherketone)
Colour beige opaque
Density 1.31 g/cm³

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1mm/min	4200	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength	50mm/min	116	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, nom specimen.
Tensile strength at yield	50mm/min	116	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield	50mm/min	5	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, nom specimen
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	2) n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	4200	MPa	DIN EN ISO 178	(6) Specimen in 4mm thickness
Compression strength	1% / 2% 5mm/min, 10 N	23 / 43	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3400	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7.5J	4	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		253	MPa	ISO 2039-1	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		150	°C	DIN EN ISO 11357	1) (1) Found in public sources
Melting temperature		342	°C	DIN EN ISO 11357	(2) Found in public sources
Service temperature	short term	300	°C		2) Individual testing regarding application conditions is mandatory.
Service temperature	long term	260	°C		
Thermal expansion (CLTE)	23-60°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1:2	
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.27	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093	
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.02 / 0.03	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		+	-		2) + good resistance
Resistance to weathering		-	-		3) - poor resistance
Flammability (UL94)	listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;	