

## 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 6mm

RS Stock No.: 514-657



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

<b>Form</b>	Solid
<b>Colour</b>	Beige
<b>Material</b>	PEEK
<b>Laminated</b>	Yes
<b>Laminated Material</b>	Acrylic; Epoxy Resin; Fine Weave Cotton; Glass Fibre
<b>Flammability Rating</b>	UL 94 V-0
<b>Polymer Type</b>	Copolymer; Homopolymer
<b>Finish</b>	Mirror
<b>Adhesive Backing</b>	Yes
<b>Applications</b>	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

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

### Mechanical Specifications

Length	500mm
Width	50mm
Thickness	6mm
Density	1.32g/cm <sup>3</sup>
Tensile Strength	95MPa
Hardness	M 99 Rockwell
Water absorption	0.5%
Thermal Conductivity	0.17W/m.K
Elongation	25%
Impact Strength	12kJM <sup>-2</sup>
Modulus Of Elasticity	4200MPa
Flexural Strength	175MPa
Compression Strength	23MPa
Compression Modulus	3400MPa
Ball Indentation Hardness	253MPa
Thermal Expansion	5x10 <sup>-5</sup> k <sup>-1</sup>
Specific Heat	1.1J/(g.K)
Specific Gravity	1.38
Flexural Modulus	2600MPa
Friction Coefficient	0.54
Poisson Ratio	0.38kJM <sup>-2</sup>

### 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/cm<sup>3</sup>

<b>Mechanical properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
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, norm 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, norm specimen
Flexural strength	2mm/min, 10 N	175	MPa	DIN EN ISO 178	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 <sup>2</sup>	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7.5J	4	kJ/m <sup>2</sup>	DIN EN ISO 179-1eA	
Ball indentation hardness		253	MPa	ISO 2039-1	6)
<b>Thermal properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
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 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1,2	
Thermal expansion (CLTE)	23-100°C, long.	5	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1,2	
Thermal expansion (CLTE)	100-150°C, long.	7	10 <sup>-5</sup> K <sup>-1</sup>	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	
<b>Electrical properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
Specific surface resistance		10 <sup>14</sup>	Ω	DIN IEC 60093	
Specific volume resistance		10 <sup>14</sup>	Ω*cm	DIN IEC 60093	
<b>Other properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
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) (2) + good resistance
Resistance to weathering		-	-		3) (3) - poor resistance
Flammability (UL94)	listed (value at 1.5mm)	VD		DIN IEC 60695-11-10;	