

## FEATURES

- Extremely high chemical resistance
- Hot water resistant
- High temperature performance a high melting point of -200 to +260°C, short-term up to 300°C
- Excellent sliding properties with low coefficient of friction
- Non-stick surface, no materials will stick to it. PTFE is also difficult to bond or weld
- High coefficient of thermal expansion (The ratio that a material expands in accordance with changes in temperature)
- Relatively low strength and rigidity
- Excellent UV and weather resistance
- Good electrical insulation properties

## Opaque Plastic Sheet, 300mm x 300mm x 12mm

RS Stock No.: 197-0089



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 PTFE solid plastic sheets available in a range of sizes and thicknesses

### General Specifications

<b>Form</b>	Solid
<b>Colour</b>	Opaque
<b>Material</b>	PTFE
<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
<b>Finish</b>	Opaque
<b>Adhesive Backing</b>	Yes
<b>Applications</b>	Components that can be manufactured from this plastic include the following: Slide bearings and runners, Pump housings and parts, Valve seats, Tank linings, Roller coverings, Pipe linings, Filter housings, Etching plates, High frequency insulation, Seals

### Electrical Specifications

<b>Specific Surface Resistance</b>	$10^{16} \Omega$
<b>Specific Volume Resistance</b>	$10^{17} \Omega \cdot \text{cm}$
<b>Dielectric Constant</b>	2.1
<b>Dielectric Loss Factor</b>	0.0017tg
<b>Breakdown Voltage</b>	17kV/mm
<b>Dielectric Strength 23°C, 50% r.h.</b>	80V/mm

### Mechanical Specifications

Length	300mm
Width	300mm
Thickness	12mm
Density	2.18 to 2.21g/cm <sup>3</sup>
Tensile Strength	25Mpa
Hardness	R 118 Rockwell
Water absorption	0.3%
Thermal Conductivity	0.17W/m.K
Elongation	50%
Impact Strength	12kJM <sup>-2</sup>
Modulus Of Elasticity	2500Mpa
Flexural Strength	91Mpa
Compression Strength	20Mpa
Compression Modulus	2300Mpa
Ball Indentation Hardness	165Mpa
Thermal Expansion	8x10 <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	260°C
Melting Point	255°C
Glass Transition Temperature	-60°C
Vicat Softening Point	65°C

### Approvals

Compliance/Certifications	CE / UR / cUR
Standards Met	DIN 53479; DIN 53736; ASTM-D 1929



## PTFE

**Chemical Designation** PTFE (Polytetrafluorethylene)    **Colour** white opaque    **Density** 2.15 g/cm<sup>3</sup>

<b>Mechanical properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
Tensile strength		22	MPa	ASTMD 4894	1)
Elongation at break		220	%	ASTMD 4894	2)
Compression strength	1% strain	5	MPa	ASTMD 695	
Shore hardness	Shore D	55		ASTMD 2240	3)
<b>Thermal properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
Glass transition temperature		- 20	°C	DIN 53765	1)
Service temperature	short term	260	°C	-	2)
Service temperature	long term	260	°C	-	
Thermal expansion (CLTE)	23-100°C, long.	13	10 <sup>-5</sup> K <sup>-1</sup>	ASTMD 696	
Thermal conductivity		0.20	W/(K*m)	ASTMC 177	
<b>Electrical properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
Specific surface resistance		10 <sup>16</sup>	Ω	ASTMD 257	1)
Specific volume resistance		10 <sup>17</sup>	Ω*cm	ASTMD 257	
Dielectric strength	in air, 0.125mm thick	80	kV/mm	ASTMD 149	
Dielectric constant	50-109Hz	2.1		ASTMD 150	
<b>Other properties</b>	<b>parameter</b>	<b>value</b>	<b>unit</b>	<b>norm</b>	<b>comment</b>
Water absorption	23°C	< 0.01	%	ASTMD 570	
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	1)