

## FEATURES

- Strong, tough and rigid
- Improved UV protection due to the black colouring
- Hot water resistant
- Good chemical resistance
- Resistant to dilute acids, cleaning agents and many solvents
- Good sliding and wear properties
- Difficult to bond
- Easily welded
- Very good electrical insulation properties
- Easy to machine and polish

## Black Plastic Sheet, 500mm x 300mm x 8mm

RS Stock No.: 282-0171



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 Acetal solid plastic sheets black in colour and available in a range of sizes and thicknesses

### General Specifications

<b>Form</b>	Solid
<b>Colour</b>	Black
<b>Material</b>	Acetal
<b>Laminated</b>	Yes
<b>Laminated Material</b>	Acrylic; Epoxy Resin; Fine Weave Cotton; Glass Fibre
<b>Flammability Rating</b>	UL 94 HB
<b>Polymer Type</b>	Copolymer
<b>Finish</b>	Clear
<b>Adhesive Backing</b>	Yes
<b>Applications</b>	Components that are manufactured from this plastic include the following: Friction bearings, Gears, Tool Supports, Housing parts, Rollers, Friction Strips, Plugs, Insulators, Agitators and kneading elements, Seals

### 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	300mm
Thickness	8mm
Density	1.41g/cm <sup>3</sup>
Tensile Strength	55MPa
Hardness	M 86 Rockwell
Water absorption	0.5%
Thermal Conductivity	0.17W/m.K
Elongation	30%
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	100°C
Melting Point	255°C
Glass Transition Temperature	150°C
Vicat Softening Point	65°C

### Approvals

Compliance/Certifications	CE / UR / cUR
Standards Met	DIN 50014

## ACETAL POM-C black

**Chemical Designation** POM-C (Polyacetal (Copolymer))  
**Colour** black opaque  
**Density** 1.41 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	2800	MPa	DIN EN ISO 527-2	1)
Tensile strength	50mm/min	67	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Tensile strength at yield	50mm/min	67	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Elongation at yield	50mm/min	9	%	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at break	50mm/min	32	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	(5) For Charpy test: support span 64mm, norm specimen.
Modulus of elasticity (flexural test)	2mm/min, 10 N	2800	MPa	DIN EN ISO 178	(6) Specimen in 4mm thickness
Compression strength	1% / 2% / 5% 5mm/min, 10 N	20/35/68	MPa	EN ISO 604	(3)
Compression modulus	5mm/min, 10 N	2300	MPa	EN ISO 604	(4)
Impact strength (Charpy)	max. 7.5J	150	kJ/m <sup>2</sup>	DIN EN ISO 179-1eU	(5)
Notched impact strength (Charpy)	max. 7.5J	6	kJ/m <sup>2</sup>	DIN EN ISO 179-1eA	
Ball indentation hardness		165	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		-60	°C	DIN EN ISO 11357	1)
Melting temperature		166	°C	DIN EN ISO 11357	(1) Found in public sources.
Service temperature short term		140	°C		(2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature long term		100	°C		(2)
Thermal expansion (CLTE)	23-60°C, long.	13	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 <sup>-5</sup> K <sup>-1</sup>	DIN EN ISO 11359-1;2	
Specific heat		1.4	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.39	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	Silver electrode, 23°C, 12% r.h.	10 <sup>14</sup>	Ω	DIN IEC 60093	1)
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 <sup>14</sup>	Ω*cm	DIN IEC 60093	2)
Dielectric strength	23°C, 50% r.h.	38	kV/mm	ISO 60243-1	3)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	(1) Specimen in 20mm thickness
					(2) Due to the black colourant and moisture uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.
					(3) Specimen in 1mm thickness
<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)	0.05 / 0.1	%	DIN EN ISO 62	1)
Resistance to hot water/ bases		(+)	-		2)
Resistance to weathering		(+)			(3) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)