

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 6mm

RS Stock No.: 282-0159



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

Form	Solid
Colour	Black
Material	Acetal
Laminated	Yes
Laminated Material	Acrylic; Epoxy Resin; Fine Weave Cotton; Glass Fibre
Flammability Rating	UL 94 HB
Polymer Type	Copolymer
Finish	Clear
Adhesive Backing	Yes
Applications	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

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	300mm
Thickness	6mm
Density	1.41g/cm ³
Tensile Strength	55MPa
Hardness	M 86 Rockwell
Water absorption	0.5%
Thermal Conductivity	0.17W/m.K
Elongation	30%
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	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

ANTI-STATIC ACETAL

Chemical Designation POM-C (Polycetal (Copolymer)) **Colour** Ivory opaque **Density** 1.35 g/cm³ **Fillers** antistatic agent

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1mm/min	1300	MPa	DIN EN ISO 527-2	1) (1) For tensile test specimen type 1b
Tensile strength	50mm/min	39	MPa	DIN EN ISO 527-2	(2) For flexural test support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	39	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield	50mm/min	23	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	50mm/min	23	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	46	MPa	DIN EN ISO 178	2) n.b. = not broken
Modulus of elasticity (flexural test)	2mm/min, 10 N	1200	MPa	DIN EN ISO 178	(6) Specimen in 4mm thickness
Compression strength	1% / 2% / 5% 5mm/min, 10 N	12/19/34	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	1100	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	9	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		74	MPa	ISO 2039-1	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		-60	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		165	°C	DIN EN ISO 11357	(2) Found in public sources.
Service temperature	short term	140	°C		Individual testing regarding application conditions is mandatory.
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	16	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	17	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		1.6	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.30	W/(K*m)	ISO 22007-4:2008	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance	Silver electrode, 23°C, 50% r.h.	10 ⁹ - 10 ¹¹	Ω	DIN IEC 60093	1) (1) Specimen in 20mm thickness
Specific volume resistance	Silver electrode, 23°C, 50% r.h.	10 ⁹	Ω*cm	DIN IEC 60093	(2) Specimen in 1mm thickness
Dielectric strength	23°C, 50% r.h.	5	kV/mm	ISO 60243-1	2)
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.9 / 1.8	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)	-	-	2) (2) (+) limited resistance
Resistance to weathering		-	-	-	3) (3) - poor resistance
Flammability (UL94)	corresponding to	HB	-	DIN IEC 60695-11-10;	4) (4) 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.

ACETAL POM-C black

Chemical Designation POM-C (Polyacetal (Copolymer))
Colour black opaque
Density 1.41 g/cm³

Mechanical properties	parameter	value	unit	norm	comment
Modulus of elasticity (tensile test)	1mm/min	2800	MPa	DIN EN ISO 527-2	1) (1) For tensile test: specimen type 1b
Tensile strength	50mm/min	67	MPa	DIN EN ISO 527-2	(2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	67	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield	50mm/min	9	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break	50mm/min	32	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	91	MPa	DIN EN ISO 178	(6) Specimen in 4mm thickness
Modulus of elasticity (flexural test)	2mm/min, 10 N	2600	MPa	DIN EN ISO 178	
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 ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7.5J	6	kJ/m ²	DIN EN ISO 179-1eA	
Ball indentation hardness		165	MPa	ISO 2039-1	6)
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		-60	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		166	°C	DIN EN ISO 11357	(2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	140	°C		2)
Service temperature	long term	100	°C		
Thermal expansion (CLTE)	23-60°C, long.	13	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, long.	14	10 ⁻⁵ K ⁻¹	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	
Electrical properties	parameter	value	unit	norm	comment
Specific surface resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	DIN IEC 60093	1) (1) Specimen in 20mm thickness
Specific volume resistance	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	DIN IEC 60093	2) (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.
Dielectric strength	23°C, 50% r.h.	38	kV/mm	ISO 60243-1	(3) Specimen in 1mm thickness
Resistance to tracking (CTI)	Platin electrode, 23°C, 50% r.h., solvent A	600	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Water absorption	24h / 96h (23°C)	0.05 / 0.1	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		(+)	-		2) (2) (+) limited resistance
Resistance to weathering		(+)	-		3) (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)