Chemical Designation

Mechanical properties

Flammability (UL94)

PET (Polyethylene terephthalate)

Colour black opaque

Density 1.39 g/cm³

Main features

- → good chemical resistance
- → very high strength
- → easy to polish
- → good weldable and bondable

value

unit

norm

- → good slide and wear properties
- → good machinability
- → high toughness

parameter

Target Industries

→ mechanical engineering

comment

taken from resin, stock shape

or estimation. Individual testing regarding application conditions is mandatory.

- → automotive industry
- → precision engineering
- → electrical engineering
- → food engineering
- → conveyor technology

Mechanical properties	parameter	value	umit	norm		comment		
Modulus of elasticity (tensile test)	1mm/min	3400	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support		
Tensile strength	50mm/min	91	MPa	DIN EN ISO 527-2		(2) For flexing less, support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. (6) Specimen in 4mm thickness		
Tensile strength at yield	50mm/min	91	MPa	DIN EN ISO 527-2				
Elongation at yield	50mm/min	4	%	DIN EN ISO 527-2				
Elongation at break	50mm/min	15	%	DIN EN ISO 527-2				
Flexural strength	2mm/min, 10 N	134	MPa	DIN EN ISO 178	2)			
Modulus of elasticity (flexural test)	2mm/min, 10 N	3400	MPa	DIN EN ISO 178				
Compression strength	1% / 2% 5mm/min, 10 N	19 / 36	MPa	EN ISO 604	3)			
Compression modulus	5mm/min, 10 N	2800	MPa	EN ISO 604	4)			
Impact strength (Charpy)	max. 7,5J	27	kJ/m ²	DIN EN ISO 179-1eU	5)			
Ball indentation hardness		195	MPa	ISO 2039-1	6)			
Thermal properties	parameter	value	unit	norm		comment		
Glass transition temperature		81	°C	DIN 53765	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding		
Melting temperature		244	°C	DIN 53765				
Service temperature	short term	170	°C		2)	application conditions is mandatory.		
Service temperature	long term	110	°C					
Thermal expansion (CLTE)	23-60°C, long.	8	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2				
Thermal expansion (CLTE)	23-100°C, long.	10	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2				
Electrical properties	parameter	value	unit	norm		comment		
Specific surface resistance		10 ¹⁴	Ω	DIN IEC 60093		(1) Due to the black colourant and moisture		
Specific volume resistance		10 ¹⁴	Ω*cm	DIN IEC 60093	1)	uptake of the material the electrical insulation properties cannot be 100% guaranteed, despite single measurements suggesting otherwise.		
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 (2) - poor resistance (3) (+) limited resistance		
Resistance to hot water/ bases		-		-	2)	(4) Corresponding means no listing at UL (yellow card). The information might be		
Resistance to weathering		(+)		-	3)			
			······			taken from regin, stock shape		

НВ



corresponding to

Available in:

Colours: White & Black Stock Sizes: Sheets & Rods

DIN IEC 60695-11-10;

4)



ERTALYTE - PET ENGINEERING PLASICS



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The polyethylene terephthalate semi-finished products that we offer - and from which we also manufacture all finished products are manufactured from semicrystalline types in an extrusion process

Ertalyte (PET)

In its molecular structure, polyethylene terephthalate (PET) - a semi-crystalline type plastic, semicrystalline types have higher hardness, rigidity and strength with outstanding sliding behaviour and low sliding wear (compared to POM in damp or dry environments)

Because of its good creep resistance, low level of moisture absorption and excellent dimensional **stability**, the material is ideally suited for **complex** parts with the highest demands on dimensional **stability** and **surface finish**. For the reasons mentioned above, only the semi-crystalline type is suitable for sliding applications.

The polyethylene terephthalate semi-finished products that we offer - and from which we also manufacture all finished products - are manufactured from semi-crystalline types in an extrusion process



Fields of Application:

- Bearings and rollers
- Bushes
- 3. Cam disks
- 4. Casing parts
- 5. Counter components
- 6. Distribution valves
- 7. Dynamic seals
- 8. Friction strips
- 9. Gearwheels
- 10. Insulators
- 11. Medical applications
- 12. Packaging machinery parts, and many more.

Key Features:

- 1. Constantly low sliding friction
- 2. Excellent wear resistance
- 3. Good adhesion and welding ability
- Good chemical resistance
- Good creep resistance
- 6. High mechanical strength
- 7. high rigidity and hardness
- 8. High stability
- 9. Low moisture absorption (at saturation 0.5 %)
- 10. low sliding friction and sliding wear
- 11. Resistant to hydrolysis (up to +70 °C)
- 12. Suitable for food contact
- 13. Temperature up to 100°C, 160°C short term
- 14. Very good creep resistance
- 15. Very high dimensional stability
- 16. Very little sliding abrasion

Other products:

- Nvlon
- 6. HDPE

7. UHMW-PE

- Polypropylene
- 3. Ertalyte (PET)
- Acetal (POM) Vesconite

Steelplast CC Est. 2010

Steelplast CC is the leading Supplier of the complete range of German Quality Engineering Plastic. Steelplast cc has been established since 2010.

With **over 21 years' experience** in engineering plastics we have been specialists from the very beginning.

Growing with the market, we have organized the company to meet the demands of a modern, globalized economy. Flexibility, integrity, cooperation – this is the core of our guidelines.



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