TECARAN ABS grey - Stock Shapes (rods, plates, tubes)

Chemical Designation
ABS (Acrylnitrile-butadiene-styrene copolymer)

Colour
grey opaque

Density
1.04 g/cm^3

Main features
- electrically insulating
- high stiffness
- good chemical resistance
- low density
- good damping
- high toughness
- low moisture absorption
- good weldable and bondable

Target Industries
- automotive industry
- electronics
- mechanical engineering

Mechanical properties	parameter	value	unit	norm		comment
Tensile strength	50mm/min	32	MPa	DIN EN ISO 527-2		(1) For tensile test: specimen type 1b (2) For flexural test: 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. n.b. = not broken
Modulus of elasticity (tensile test)	1mm/min	1700	MPa	DIN EN ISO 527-2	1)	
Tensile strength at yield	50mm/min	32	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	3	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	49	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	49	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	1600	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	15/26/46	MPa	EN ISO 604	3)	
Compression modulus	5mm/min, 10 N	1400	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	34	kJ/m^2	DIN EN ISO 179-1eA		
Shore hardness	D	75		DIN EN ISO 868		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		104	°C	DIN EN ISO 11357	1)	(1) Found in public sources. (2) Found in public sources. Individual testing regarding application conditions is mandatory.
Service temperature	short term	100	°C		2)	
Service temperature	long term	75	°C			

Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10^{14}	Ω	-	
volume resistivity		10^{14}	Ω*cm	-	

Other properties	parameter	value	unit	norm		comment
Water absorption	24h / 96h (23°C)	0.07 / 0.2	%	DIN EN ISO 62	1)	(1) Ø ca. 50mm, h=13mm (2) - poor resistance (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.
Resistance to hot water/ bases		-		-	2)	
Resistance to weathering		-				
Flammability (UL94)	corresponding to	HB		DIN IEC 60695-11-10;	3)	

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