

TECAMID 6 FRT natural - Stock Shapes (rods, plates, tubes)

Chemical Designation

PA 6 (Polyamide 6)

Colour

ivory opaque

Density

1.19 g/cm³

Fillers

flame retardant (halogen free)

Main features

- tested according to EN 45545
- flame retardant as per FAR 25.853
- flame retardant according to UL94 V-0
- resistant to many oils, greases and fuels
- good slide and wear properties
- high strength
- good machinability

Target Industries

- aircraft and aerospace technology
- transportation
- electronics
- mechanical engineering
- automotive industry

Data generated directly after machining
(standard climate Germany).

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	79	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	3900	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	79	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	3	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	3	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	121	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	3900	MPa	DIN EN ISO 178	
Compression strength	1% / 2% 5mm/min, 10 N	15 / 34	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	3300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	53	kJ/m ²	DIN EN ISO 179-1eU	5)
Shore hardness	D	81		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		45	°C	DIN EN ISO 11357	1)
Melting temperature		221	°C	DIN EN ISO 11357	
Service temperature	short term	160	°C		2)
Service temperature	long term	100	°C		
Electrical properties	parameter	value	unit	norm	comment
surface resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω	-	1) (1) found in public sources (2) based on raw material data
volume resistivity	Silver electrode, 23°C, 12% r.h.	10 ¹⁴	Ω*cm	-	
Resistance to tracking (CTI)		600		DIN EN 60112	2)
Other properties	parameter	value	unit	norm	comment
Resistance to hot water/ bases		(+)		-	1) (1) (+) limited resistance (2) - poor resistance
Resistance to weathering		-		-	2) (3) compliant, tested on 3 mm thick test specimen (4) compliant, tested on 4 mm thick test specimen (5) compliant, tested on 4 mm thick test specimen (6) compliant, tested on 4 mm thick test specimen (7) compliant, tested on 4 mm thick test specimen
Flammability (UL94)	raw material listed (value at 1.5mm)	V0		DIN IEC 60695-11-10;	
Flammability		R22 HL1 HL2, R23 HL3		EN 45545-2:2016	
Flammability	60 sec. Vertical Bunsen Burner test, 25.853 (a) and Appendix F, Part I, para. (a)(1)(i)	+		FAR 25.853	3)
Flammability	15 sec. Horizontal Bunsen Burner test, 25.853 (a) and Appendix F, Part I, para. (a)(1)(iv) and (v)	+		FAR 25.853	4)
Flammability	Heat Release, FAR Part 25, § 25.853 (d) and Appendix F, Part IV	+		FAR 25.853	5)
Flammability	Smoke density FAR Part 25, § 25.853 (d) and Appendix F, Part V	+		FAR 25.853	6)
Flammability	Gas Toxicity, as per Airbus directive ABD 0031	+		AITM 3.0005	7)

Our information and statements reflect the current state of our knowledge and shall inform about our products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for specification purposes. Unless otherwise noted, these values were determined by tests at reference dimensions (typically rods with diameter 40-60 mm according to DIN EN 15860) on extruded and machined specimen. As the properties depend on the dimensions of the semi-finished products and the orientation in the component (esp. in reinforced grades), the material may not be used without a separate testing under individual circumstances. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at www.ensingerplastics.com. Technical changes reserved.