Technical Specification Sheets

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Chemical Designation
PAI (Polyamide-imide)

Colour
black opaque

Density
1.47 g/cm^3

Fillers
carbon fibres

production process: compression moulding

Main features
- excellent strength and stiffness
- very good thermal stability
- excellent dimensional stability
- excellent chemical resistance

Target Industries
- aircraft and aerospace technology
- process engineering
- chemical and refinery industry
- oil and gas industry

Mechanical properties	*parameter*	*value*	*unit*	*norm*		*comment*
Modulus of elasticity (tensile test)	1mm/min	12100	MPa	DIN EN ISO 527-2	1)	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) For Charpy test: support span 64mm, norm specimen. (5) Specimen in 4mm thickness
Tensile strength at break	5mm/min	176	MPa	DIN EN ISO 527-2		
Elongation at break (tensile test)	5mm/min	2,8	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	296	MPa	DIN EN ISO 178	2)	
Modulus of elasticity (flexural test)	2mm/min, 10 N	9900	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5%	18/46/136	MPa	EN ISO 604	3)	
Impact strength (Charpy)	max. 7,5J	50	kJ/m^2	DIN EN ISO 179-1eU	4)	
Ball indentation hardness		321	MPa	ISO 2039-1	5)	
Shore hardness	D scale	94		DIN EN ISO 868		

Thermal properties	*parameter*	*value*	*unit*	*norm*	*comment*
Glass transition temperature		286	°C	-	
Thermal expansion (CLTE)	23-60°C, longitudinal	2,3	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	23-100°C, longitudinal	2,1	10^{-5} K^{-1}	DIN EN ISO 11359-1;2	

Other properties	*parameter*	*value*	*unit*	*norm*	*comment*
Moisture absorption	24h / 96h (23°C)	0,3 / 0,44	%	DIN EN ISO 62	
Flammability (UL94)	3,2 mm	V0		-	