

## PA6 (POLYAMIDE) CAST GM

### MATERIAL DATA SHEET

PROPERTIES	Test methods	Units	VALUES
Colour	-	-	natural (ivory)
Density	ISO 1183-1	g/cm <sup>3</sup>	1.15
Water absorption:			
- after 24/96 h immersion in water of 23°C	ISO 62	mg	44 / 83
	ISO 62	%	0.65 / 1.22
- at saturation in air of 23°C / 50% RH	-	%	2.2
- at saturation in water of 23°C	-	%	6.5
<b>Thermal Properties</b>			
Melting temperature	ISO 11357-1/3	°C	215
Thermal conductivity at 23°C	-	W/(K.m)	0.29
Coefficient of linear thermal expansion:			
- average value between 23 and 60°C	-	m/(m.K)	80 x 10 <sup>-6</sup>
- average value between 23 and 100°C	-	m/(m.K)	90 x 10 <sup>-6</sup>
Temperature of deflection under load:			
- method A: 1.8 MPa	ISO 75-1/-2	°C	80
Max. allowable service temperature in air:			
- for short periods	-	°C	170
- continuously : for min. 5,000 / 20,000 h	-	°C	105 / 90
Flammability			
- "Oxygen Index"	ISO 4589-1/-2	%	25
- according to UL 94 (3 / 6 mm thickness)	-	-	HB / HB
Min. service temperature	-	°C	-30
<b>Mechanical Properties at 23°C</b>			
Tension test			
- tensile stress at yield / tensile stress at break	ISO 527-1/-2	MPa	86 / -
- tensile strength	ISO 527-1/-2	MPa	88
- tensile strain at break	ISO 527-1/-2	%	25
- tensile strain at yield	ISO 527-1/-2	%	5
- tensile modulus of elasticity	ISO 527-1/-2	MPa	36 00
Compression test			
- compressive stress at 1 / 2 / 5 % nominal strain	ISO 604	MPa	34 / 64 / 93
Charpy impact strength - unnotched	ISO 179-1/1eU	kJ/m <sup>2</sup>	no break
Charpy impact strength - notched	ISO 179-1/1eA	kJ/m <sup>2</sup>	3
Ball indentation hardness	ISO 2039-1	N/mm <sup>2</sup>	165
Rockwell hardness	ISO 2039-2	-	M 88
<b>Electrical Properties at 23 °C</b>			
Electric strength	IEC 60243-1	kV/mm	25
Volume resistivity	IEC 60093	Ohm.cm	> 10 <sup>14</sup>
Surface resistivity	ANSI/ESD STM 11.11	Ohm/sq.	> 10 <sup>13</sup>
Relative permittivity $\epsilon_r$ : - at 100 Hz	IEC 60250	-	3.6
- at 1 MHz	IEC 60250	-	3.2
Dielectric dissipation factor $\tan \delta$ : - at 100 Hz	IEC 60250	-	0.012
- at 1 MHz	IEC 60250	-	0.016
Comparative tracking index (CTI)-	IEC 60112	-	600

Note: 1 g/cm<sup>3</sup> = 1,000 kg/m<sup>3</sup> ; 1 MPa = 1 N/mm<sup>2</sup> ; 1 kV/mm = 1 MV/m. NA: not applicable

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