



## PA6+OIL

### Chemical Designation POLYAMIDE

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

This internally lubricated cast nylon 6 is self-lubricating in the real meaning of the word. **PA6+OIL**, especially developed for unlubricated, highly loaded and slow moving parts applications, yields a considerable enlargement of the application opportunities compared to standard cast nylons. It offers a reduced coefficient of friction (up to 50% lower), considerably increasing the pressure-velocity capabilities, and a vastly improved wear resistance (up to 10 times better).

PROPERTIES	Test methods	Units	VALUES
Colour	-	-	green
Density	ISO 1183-1	g/cm <sup>3</sup>	1.135
Water absorption:			
- after 24/96 h immersion in water of 23 °C	ISO 62	mg	44 / 83
- at saturation in air of 23 °C / 50 % RH	-	%	2
- at saturation in water of 23 °C	-	%	6.3
<b>Thermal Properties</b>			
Melting temperature (DSC, 10 °C/min)	ISO 11357-1/3	°C	215
Thermal conductivity at 23 °C	-	W/(K.m)	0.28
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	75
Max. allowable service temperature in air:			
- for short periods	-	°C	165
- continuously : for 5,000 / 20,000 h	-	°C	105 / 90
Min. service temperature	-	°C	-20
Flammability :			
- according to UL 94 (3 / 6 mm thickness)	-	-	HB / HB
<b>Mechanical Properties at 23°C</b>			
Tension test :			
- tensile stress at yield / tensile stress at break	+ ISO 527-1/-2	MPa	72 / -
- tensile strength	+ ISO 527-1/-2	MPa	73
- tensile strain at yield	+ ISO 527-1/-2	%	5
- tensile modulus of elasticity	+ ISO 527-1/-2	MPa	3000
Compression test :			
- compressive stress at 1 / 2 / 5 % nominal strain	+ ISO 604	MPa	31 / 58 / 85
Charpy impact strength - Unnotched	+ ISO 179-1/1eU	kJ/m <sup>2</sup>	50
Charpy impact strength - Notched	+ ISO 179-1/1eA	kJ/m <sup>2</sup>	4
Ball indentation hardness	+ ISO 2039-1	N/mm <sup>2</sup>	145
Rockwell hardness	+ ISO 2039-2	-	M 82
<b>Electrical Properties at 23°C</b>			
Electric strength	+ IEC 60243-1	kV/mm	22
Volume resistivity	+ IEC 60093	Ohm.cm	> 10 <sup>14</sup>
Surface resistivity	+ IEC 60093	Ohm	> 10 <sup>13</sup>
Relative permittivity $\epsilon_r$ : - at 100 Hz	+ IEC 60250	-	3.5
Relative permittivity $\epsilon_r$ : - at 1 MHz	+ IEC 60250	-	3.1
Dielectric dissipation factor tan $\delta$ : - at 100 Hz	+ IEC 60250	-	0.015
Dielectric dissipation factor tan $\delta$ : - at 1 MHz	+ IEC 60250	-	0.016
Comparative tracking index (CTI)	+ IEC 60112	-	600

- NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.

