

**Product Texts**

Lubricated grade with improved wear resistance, PTFE free.

Flammability @3.2mm nom. thickn. HB -  
 Flammability @1.6mm nom. thickn. HB -

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	0.7 / *	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	1.0 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	5000 / -	MPa	ISO 527
<sup>[C]</sup> Stress at break	100 / -	MPa	ISO 527
<sup>[C]</sup> Strain at break	3.5 / -	%	ISO 527

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	225 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	240 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Volume resistivity	1E13 / -	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	* / 1E13	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	21 / -	kV/mm	IEC 60243-1

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
<sup>[C]</sup> Water absorption	6 / *	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	1.6 / *	%	Sim. to ISO 62
<sup>[C]</sup> Density	- / 1200	kg/m <sup>3</sup>	ISO 1183

[C]: CAMPUS

**Characteristics**

**Processing**

Injection Molding

**Additives**

Lubricants

**Delivery form**

Granules, Black

**Regional Availability**

Europe

**Other text information**

**Injection molding**

PA materials, stocked in a moisture-proof packaging, can be processed without drying; however, it is always recommended drying the product that comes from a large package (e.g. Octabin). The moisture content suggested for the injection moulding process should be lower than 0.15%, according to the grade and to the moulded part characteristics. The materials containing flame retardants should

have moisture content below 0.10%. Red phosphorous containing grades must always be dried below 0.08%. The drying time depends on the moisture content and the drying conditions. Typically 4-8 hours at 80-90C using dehumidified air (dew point of -20C) are suitable conditions for a starting moisture content of 0.20%-0.40%.

The following conditions apply to a standard injection moulding process. Machine temperatures: barrel 265-290C (PA66), 235-270C (PA6), nozzle and hot runners up to 300C (up to 290C products with flame retardants). Mould temperatures: 60-80C, (80-100C highly reinforced grades). Back pressure: typically 5-10 bar (hydraulic pressure). Temperatures exceeding 300C and long residence time could lead to additives degradation and brittleness of the material. In case of gas generation in the melt, please verify moisture content and processing temperatures. Usage of regrind is possible depending on the moulded part characteristics. For further details, please refer to the document 'Instructions for injection moulding' or contact our technical support team.

PA materials reach their final performance with a water content of about 1.5 to 3.5% by weight, depending on the type. This percentage corresponds to the point of equilibrium between the rates of absorption and desorption of moisture. After moulding, in favourable environmental conditions, a part can quickly absorb moisture up to 0.5-1.0%, while the equilibrium will be reached during its life. A conditioning treatment can accelerate further the initial water absorption of the moulded parts. Conditioning is usually carried out in hot and humid environment (for example 50C, 100% RH), inside climatic chambers. Slight dimensional variations (increase in volume due to the water absorbed) must be taken into account, especially in unfilled grades. Post-treatments of parts may also include the annealing (60-80C in oven, up to four hours). This procedure can be useful to relax any internal stresses.