

Product Texts

Intended for engineering applications that require a maximum service temperature higher than that of normal aliphatic polyamides. In addition to the outstanding thermal and chemical resistance, it provides high and constant mechanical performance, unaltered even after moisture absorption. Excellent creep behavior and dimensional stability. Extended heat ageing resistance.

Flammability @1.6mm nom. HB
thickn.

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
ISO Data			
^[C] Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
^[C] Molding shrinkage, normal	0.6 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Tensile Modulus	13000 / 13000	MPa	ISO 527
^[C] Stress at break	200 / 195	MPa	ISO 527
^[C] Strain at break	1.8 / 1.8	%	ISO 527
^[C] Charpy impact strength, +23°C	50 / 37	kJ/m ²	ISO 179/1eU
^[C] Charpy impact strength, -30°C	38 / -	kJ/m ²	ISO 179/1eU
^[C] Charpy notched impact strength, +23°C	9 / -	kJ/m ²	ISO 179/1eA
^[C] Charpy notched impact strength, -30°C	7.5 / -	kJ/m ²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
^[C] Temp. of deflection under load, 1.80 MPa	270 / *	°C	ISO 75-1/-2
^[C] Burning Behav. at 1.5 mm nom. thickn.	HB / *	class	IEC 60695-11-10

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
^[C] Water absorption	3.8 / *	%	Sim. to ISO 62
^[C] Humidity absorption	1.3 / *	%	Sim. to ISO 62
^[C] Density	- / 1480	kg/m ³	ISO 1183

[C]: CAMPUS

Characteristics

Processing

Injection Molding

Features

Creep Resistance

Delivery form

Granules, Black

Chemical Resistance

General Chemical Resistance

Special Characteristics

Heat stabilized or stable to heat

Other text information

Injection molding

The XT1 compound is supplied in a moisture-proof package. The maximum humidity content allowed for the injection molding process is 0.10%, but in order to obtain the best performance and avoid possible degradation phenomena we recommend molding with a moisture content < 0.08%. The drying time depends on the initial moisture content and the drying conditions used. Generally 4-6 hours at 120°C with dry air (dew point of about -30°C) are sufficient to prepare a granule stored in unopened packages or with a moisture content of < 0.20-0.25%.

The following conditions apply to the normal injection molding process of XT1 compounds. Machine temperatures: barrel 310-325°C, nozzle and hot runners 325-340°C. Mold temperatures: > 135°C. Back pressure: typically 5 bar (hydraulic pressure). Temperatures exceeding 340°C and long residence time could lead to 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 molded part characteristics. For further details, please contact our technical support team.

Parts made by XT1, do not change significantly their performance depending on the moisture uptake. Normally, a conditioning cycle is not necessary. After molding, with favorable environmental conditions, a piece can absorb moisture up to 0,2% in 24h and reach the equilibrium during its lifetime. The post-treatment of the parts may include annealing at 150-160°C in the oven, for two to four hours depending on the temperature. This treatment is useful to relax any internal stress and maximize thermomechanical performance.

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