Celanese
The chemistry inside innovation™

NILAMID B3 J GF30 BK 9005 - PA6

Description

PA6 high impact modified, 30% glass fibres reinforced.
Car industry, Household appliances, Electrical devices.

Physical properties	dry / cond	Unit	Test Standard
Density	**1290** / -	kg/m³	ISO 1183
Molding shrinkage, parallel	**0.2 - 0.5**	%	ISO 294-4, 2577
Molding shrinkage, normal	**0.8 - 1.1**	%	ISO 294-4, 2577
Water absorption, 23°C-sat	**6.5** / *	%	ISO 62
Humidity absorption, 23°C/50%RH	**1.8** / *	%	ISO 62
Viscosity number (PA), H2SO4	**145** / *	-	ISO 307 (PA)

Mechanical properties	dry / cond	Unit	Test Standard
Tensile modulus	**7700** / -	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	**120** / -	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	**5** / -	%	ISO 527-2/1A
Charpy impact strength, 23°C	**NB** / -	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**NB** / -	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	**20** / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**14** / -	kJ/m²	ISO 179/1eA
Ball indentation hardness, 30s	**145**	MPa	ISO 2039-1

Thermal properties	dry / cond	Unit	Test Standard
Melting point, peak	**225**	°C	ISO 3146
DTUL at 1.8 MPa	**160** / *	°C	ISO 75-1, -2
DTUL at 0.45 MPa	**200** / *	°C	ISO 75-1, -2
Continuous service temperature	**95** / *	°C	DIN/IEC 60216-1

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	**1E15** / -	Ohm*m	IEC 60093
Comparative tracking index	**550** / -	-	IEC 60112

Other text information

Injection Molding Preprocessing

PA materials, stocked in a moisture-proof packaging, can be processed without drying; however, it is always recomended 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%.

Injection molding

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.

Injection Molding Postprocessing

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 absorbs moisture up to 0.5-1.0%, while the equilibrium will be reached during its life. A conditioning treatment can