CELANYL® A3 HH GF50 BK 9005/AG

Polyamide 66 compound, 50% glass fibre reinforced, heat stabilized.
Grade for technical uses, designed for Automotive parts under the hood. High stiffness and long term heat ageing resistance.

Product information

Part Marking Code	> PA66-GF50 <		ISO 11469

Rheological properties

Melt volume-flow rate	15	cm^3/10min	ISO 1133
Temperature	270	°C	
Load	5	kg	
Moulding shrinkage range, parallel	0.2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.3	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	17000 / 13000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	230 / 170	MPa	ISO 527-1/-2
Strain at break, 5mm/min	2 / 2.8	%	ISO 527-1/-2
Flexural Modulus	15000 / -	MPa	ISO 178
Flexural Strength	310 / -	MPa	ISO 178
Charpy impact strength, 23°C	65 / 70	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	13 / 15	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	13 / -	kJ/m^2	ISO 180/1A

Thermal properties

Melting temperature, 10°C/min	265	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	257	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	260	°C	ISO 75-1/-2

Flammability

Burning Behav. at thickness h	HB	class	UL 94
Glow Wire Flammability Index, 0.75mm	650	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	650	°C	IEC 60695-2-12

Electrical properties

	dry/cond.		
Electric strength	22 / -	kV/mm	IEC 60243-1

Other properties

Humidity absorption, 2mm	1.1	%	Sim. to ISO 62
Water absorption, 2mm	3.5	%	Sim. to ISO 62
Density	1570	kg/m^3	ISO 1183

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Additional information

Injection molding	The following conditions apply to a standard injection molding process. Machine temperatures: barrel 265-290°C (PA66), 235-270°C (PA6), nozzle and hot runners up to 300°C (up to 290°C products with flame retardants). Mold temperatures: 60-80°C, (80-100°C highly reinforced grades). Back pressure: typically, 5-10 bar (hydraulic pressure). Temperatures exceeding 300°C 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 molded part characteristics. For further details, please refer to the document 'Instructions for injection molding' or contact our technical support team.

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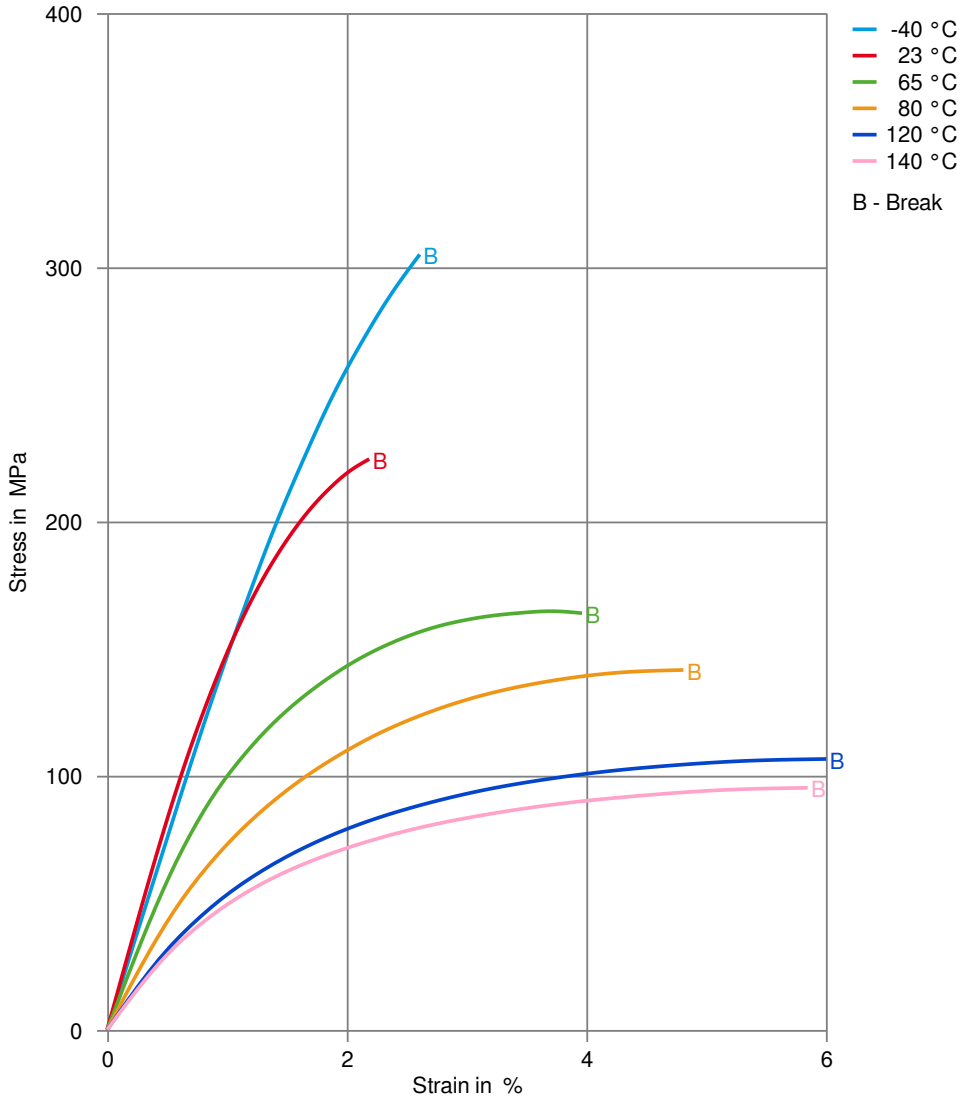
Stress-strain (dry)



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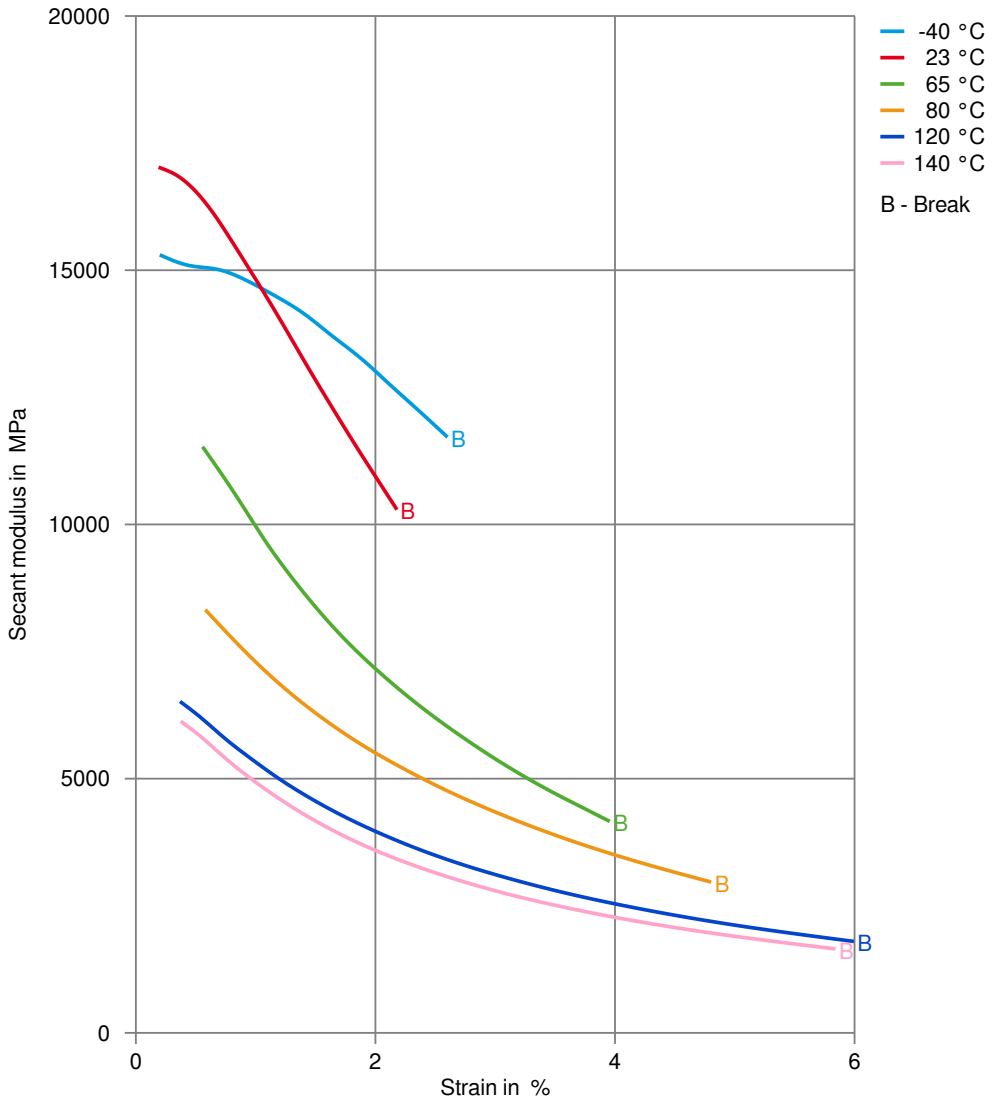
Secant modulus-strain (dry)



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Processing Texts

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Injection molding Preprocessing	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 molding process should be lower than 0.15%, according to the grade and to the molded 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 80-90°C using dehumidified air (dew point of -20°C) are suitable conditions for a starting moisture content of 0.20%-0.40%.
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 molding, in favorable 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 accelerate further the initial water absorption of the molded parts. Conditioning is usually carried out in hot and humid environment (for example 50°C, 100% RH), inside climatic chambers. Slight dimensional variations (increase in volume due to the water absorbed) must be considered, especially in unfilled grades. Post-treatments of parts may also include the annealing (60-80°C in oven, up to four hours). This procedure can be useful to relax any internal stresses.

Other Approvals

Other Approvals

OEM	Specification	Additional Information
VW Group*	VW50133	* best fitting grade to PA66-8-A, not officially approved

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VW Group*	VW50127	* best fitting grade to PA66-10, not officially approved