Ultramid® A3WGM53 BK20560

PA66-(GF+MD)40 BASF

Combined glass-fibre and mineral reinforced injection moulding grade for high stiffness parts with good dimensional stability and surface finish.
I.e.: automotive cylinder-head cover

Rheological properties	dry / cond	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	30 / *	cm³/10min	ISO 1133
Temperature	275 / *	°C	-
Load	5 / *	kg	-
Molding shrinkage, parallel	0.3 / *	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	12100 / 6100	MPa	ISO 527
Stress at Break	160 / 80	MPa	ISO 527
Strain at Break	2.3 / 6	%	ISO 527
Impact Strength (Charpy), +23°C	55 / 62	kJ/m²	ISO 179/1eU
Impact Strength (Charpy), -30°C	50 / -	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / 16	kJ/m²	ISO 179/1eA
Notched Impact Strength (Charpy), -30°C	6.7 / -	kJ/m²	ISO 179/1eA

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	260 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	225 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	250 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	27 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	84 / *	E-6/K	ISO 11359-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	4 / -	-	IEC 62631-2-1
Dissipation Factor, 1MHz	200 / -	E-4	IEC 62631-2-1
Volume Resistivity	1E13 / 1E10	Ohm*m	IEC 62631-3-1
Surface Resistivity	* / 1E10	Ohm	IEC 62631-3-2
Comparative tracking index	- / 375	-	IEC 60112

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	5.1 / *	%	Sim. to ISO 62
Humidity absorption	1.4 / *	%	Sim. to ISO 62
Density	1480 / -	kg/m³	ISO 1183

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	136 / *	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Ejection temperature	195	°C	-

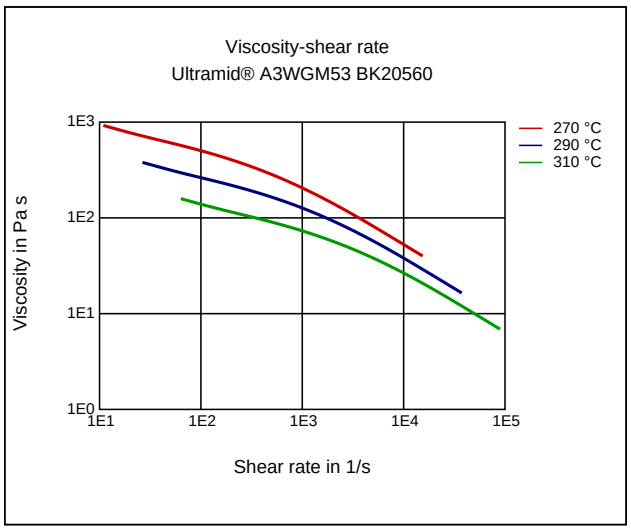
Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	290	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	80	°C	-
Pre-drying - Time	4	h	-
Processing humidity	≤0.15	%	-

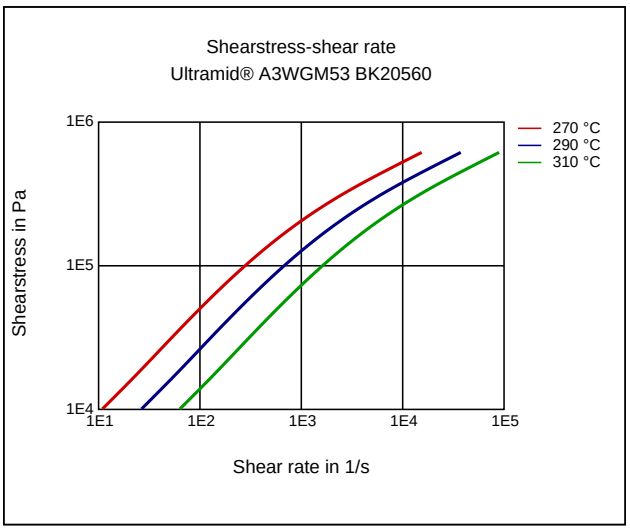
Melt temperature	280 - 300	°C	-
Mold temperature	80 - 90	°C	-

Diagrams

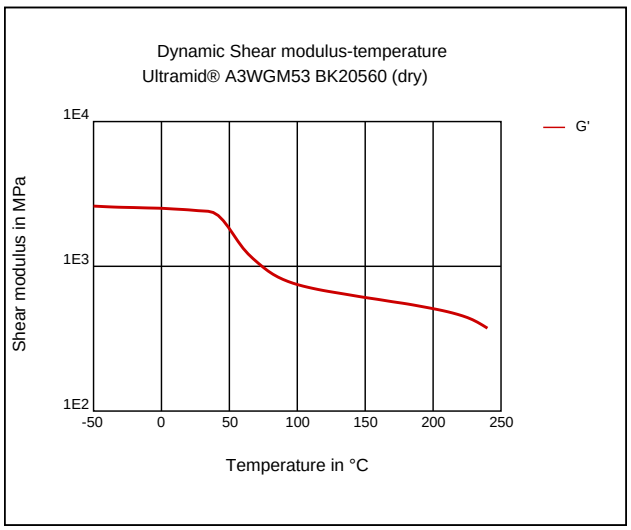
Viscosity-shear rate



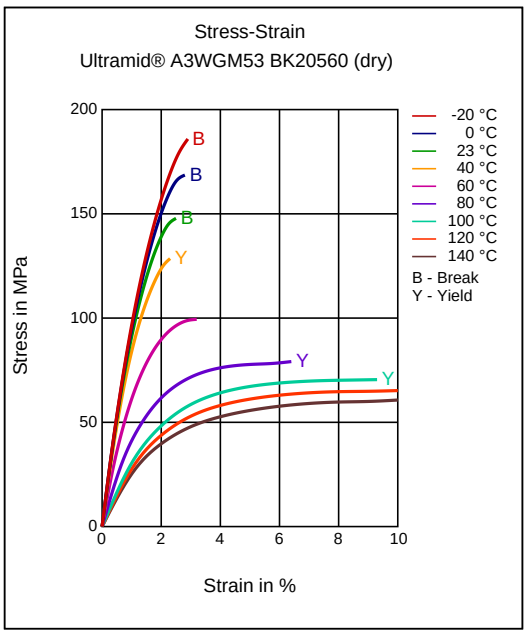
Shearstress-shear rate



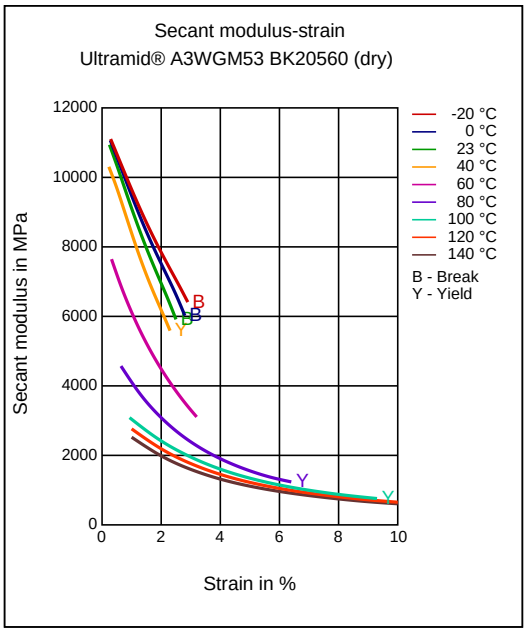
Dynamic Shear modulus-temperature



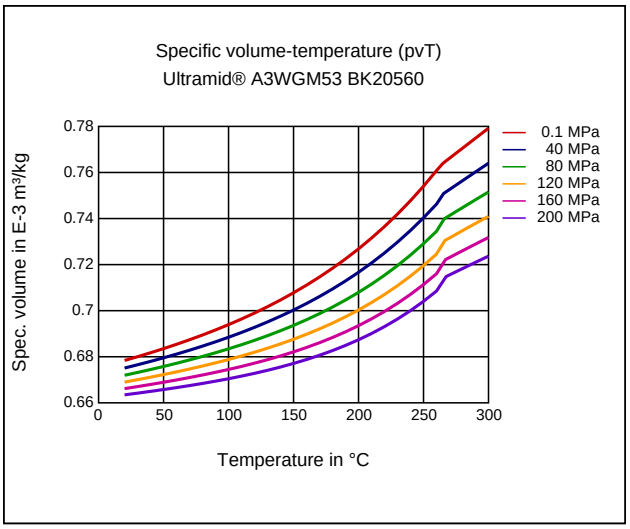
Stress-strain



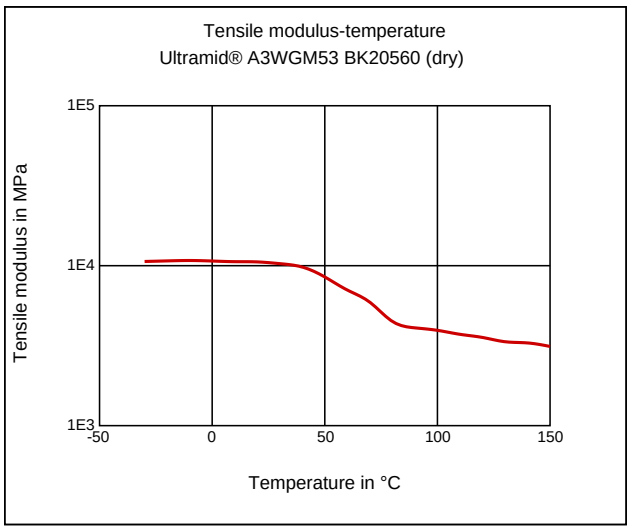
Secant modulus-strain



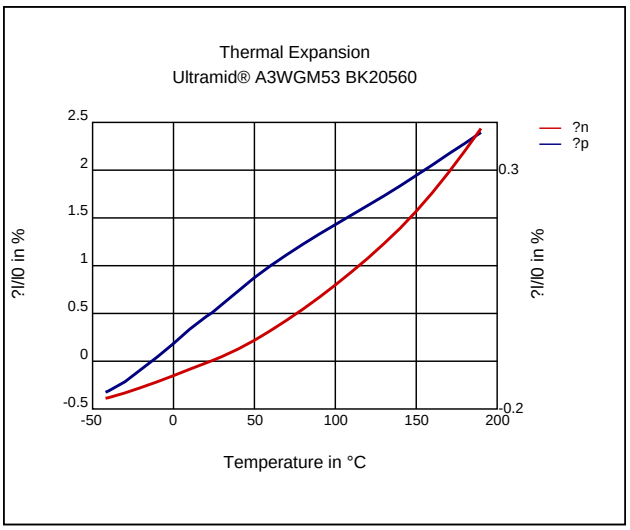
Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Coeff. of linear thermal expansion, normal



Characteristics

Processing
Injection Molding

Special Characteristics
Heat aging stabilized

Delivery form
Pellets, Black

Applications
Automotive

Additives
Lubricants, Release agent

Injection Molding
PREPROCESSING
Pre/Post-processing, max. allowed water content: .15 %
Pre/Post-processing, Pre-drying, Temperature: 80 °C

Pre/Post-processing, Pre-drying, Time: 4 h

PROCESSING
injection molding, Melt temperature, range: 280 - 300 °C
injection molding, Melt temperature, recommended: 290 °C
injection molding, Mold temperature, range: 80 - 90 °C
injection molding, Mold temperature, recommended: 80 °C
injection molding, Dwell time, thermoplastics: 10 min

Chemical Media Resistance

Acids

✔ Acetic Acid (5% by mass) (23°C)

Disclaimer

Liability Exclusion
These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

Any information given on the chemical and physical characteristics of our products, including, without limitation, technical advice on applications, whether verbally, in writing or by testing the product, is given to the best of our knowledge and in good faith and does not exempt the buyer from carrying out their own investigations and tests in order to ascertain the product's specific suitability for the purpose intended.

The buyer is solely responsible for confirming the suitability of the product for a particular application, its utilization and processing and must observe any applicable laws and government regulations. **NO EXPRESS OR IMPLIED RECOMMENDATION OR WARRANTY IS GIVEN WITH REGARD TO THE SUITABILITY OF THE PRODUCT FOR A PARTICULAR APPLICATION, SUCH AS, BUT NOT LIMITED TO, SAFETY-CRITICAL COMPONENTS OR SYSTEMS.**

Healthcare uses: the supply of any product by ALBIS for any medical, pharmaceutical or diagnostic application is conditional to an assessment by ALBIS in terms of compliance with ALBIS' internal risk management policy – even for products which are in general designated for use in Healthcare applications.
Important: irrespective of product type or designation, ALBIS does not recommend or support the use of any products it supplies which fall into the following medical, pharmaceutical or diagnostic application categories:

- risk class III applications according to EU directive 93/42/EEC
- any bodily implant application for greater than 30 days
- any critical component in any medical device that supports or sustains human life.

At all times, our standard terms and conditions of sale apply.