BASF
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ALBIS

Ultramid® B3G4

PA6-GF20 BASF

20% glass reinforced nylon 6 injection molding compound possessing a balance of engineering properties combined with excellent processability and surface aesthetics. It is ideally suited for more demanding performance applications such as safety helmet parts, washers, gears, engine and motor parts, chutes.

Mechanical Properties	dry / cond	Unit	Test Standard
ISO Data			
Tensile Modulus	6700 / -	MPa	ISO 527
Stress at Break	140 / -	MPa	ISO 527
Strain at Break	4 / -	%	ISO 527
Impact Strength (Charpy), +23°C	60 / -	kJ/m²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	8 / -	kJ/m²	ISO 179/1eA
Flexural Modulus (23°C)	5700 / -	MPa	ISO 178

Thermal Properties	dry / cond	Unit	Test Standard
ISO Data			
Melting Temperature (10°C/min)	220 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	200 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	215 / *	°C	ISO 75-1/-2
Coeff. of Linear Therm. Expansion, parallel	25 / *	E-6/K	ISO 11359-1/-2
Coeff. of Linear Therm. Expansion, normal	110 / *	E-6/K	ISO 11359-1/-2

Electrical Properties	dry / cond	Unit	Test Standard
ISO Data			
Volume Resistivity	>1E13 / -	Ohm*m	IEC 62631-3-1

Other Properties	dry / cond	Unit	Test Standard
ISO Data			
Water Absorption	7.6 / *	%	Sim. to ISO 62
Humidity absorption	2.2 / *	%	Sim. to ISO 62
Density	1280 / -	kg/m³	ISO 1183
Bulk density	700	kg/m³	-

Material Specific Properties	dry / cond	Unit	Test Standard
ISO Data			
Viscosity number	145 / *	cm³/g	ISO 307, 1157, 1628

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	275	°C	ISO 294
Injection Molding, mold temperature	95	°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	270 - 295	°C	-
Mold temperature	80 - 95	°C	-

Characteristics

Processing
Injection Molding

Additives
Release agent

Delivery form
Pellets

Injection Molding

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

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

PROCESSING
injection molding, Melt temperature, range: 270 - 290 °C
injection molding, Melt temperature, recommended: 280 °C
injection molding, Mold temperature, range: 80 - 90 °C
injection molding, Mold temperature, recommended: 80 °C
injection molding, Dwell time, thermoplastics: 10 min

PREPROCESSING
Max. Water content: 0.12%
Product is supplied in sealed containers and drying prior to molding is not required. If drying becomes necessary, a dehumidifying or desiccant dryer operating at 80 °C (176 °F) is recommended. Drying time is dependent on moisture level.
Further information concerning safe handling procedures can be obtained from the Material Safety Data Sheet. Alternatively, please contact your BASF representative.

PROCESSING
Melt Temperature 270-295 °C (518-563 °F)
Mold Temperature 80-95 °C (176-203 °F)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

This product can be processed over a wide range of mold temperatures; however, for applications where aesthetics are critical, a mold surface temperature of 80-95 °C (176-203 °F) is required.

Injection pressure controls the filling of the part and should be applied for 90% of ram travel. Packing pressure affects the final part and can be used effectively in controlling sink marks and shrinkage. It should be applied and maintained until the gate area is completely frozen off.

Back pressure can be utilized to provide uniform melt consistency and reduce trapped air and gas. A maximum of 3.5 bar (50 psi) is recommended to minimize glass fiber breakage.

Fast fill rates are recommended to insure uniform melt delivery to the cavity and prevent premature freezing. Surface appearance is directly affected by injection rate.