Ultramid® D3WG12 HMG BK00102

PA*-GF60 BASF

Product Texts

Ultramid® D3WG12 HMG BK00102 is a 60% glass reinforced, injection molding polyamide offering high strength and stiffness. Due to inherently lower moisture absorption, this grade shows improved retention of mechanical properties after moisture conditioning. In addition, molded parts possess an exceptional surface finish.

Applications
Ultramid® D3WG12 HMG BK00102 was designed for applications requiring very high rigidity and should be considered for components that are constructed with metal.

Mechanical properties	dry / cond	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**20200 / 20830**	MPa	ISO 527
[C] Stress at break	**248 / 220**	MPa	ISO 527
[C] Strain at break	**2.5 / 2.2**	%	ISO 527
[C] Charpy impact strength, +23°C	**99 / 93**	kJ/m²	ISO 179/1eU
[C] Charpy impact strength, -30°C	**95 / 85**	kJ/m²	ISO 179/1eU
[C] Charpy notched impact strength, +23°C	**13 / 15**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**12 / 12**	kJ/m²	ISO 179/1eA

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
ISO Data			
[C] Melting temperature, 10°C/min	**260 / ***	°C	ISO 11357-1/-3
[C] Temp. of deflection under load, 1.80 MPa	**224 / ***	°C	ISO 75-1/-2

[C]: CAMPUS

Other properties	dry / cond	Unit	Test Standard
[C] Density	**1750 / -**	kg/m³	ISO 1183

[C]: CAMPUS

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	**80**	°C	-
Pre-drying - Time	**2 - 4**	h	-
Processing humidity	**≤0.15**	%	-
Melt temperature	**280 - 305**	°C	-
Mold temperature	**80 - 90**	°C	-

Characteristics

Processing
Injection Molding

Regional Availability
North America

Delivery form
Pellets, Black

Other text information

Injection molding
PREPROCESSING
Pre/Post-processing, max. allowed water content: .12 %
Pre/Post-processing, Pre-drying, Temperature: 80 °C
Pre/Post-processing, Pre-drying, Time: 2 - 4 h

PROCESSING
injection molding, Melt temperature, range: 280 - 305 °C
injection molding, Mold temperature, range: 80 - 90 °C

Material Handling

Max. Water content: 0.15%
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, However 2-4 hours is generally sufficient. Recommended moisture levels for achieving optimum surface qualities and mechanical properties is 0.05% - 0.12%. Further information concerning safe handling procedures can be obtained from the Safety Data Sheet. Alternatively, please contact your BASF representative.

Typical Profile
Melt Temperature 280-305°C (536-581°F)
Mold Temperature 80-90°C (176-194°F)
Injection and Packing Pressure 35-125 bar (500-1500 psi)

Mold Temperatures
A mold temperature of 80-90°C (176-194°F) is recommended, however temperatures of as low as 45°C (113°F) and as high as 105°C (221°F) can be used where applicable.

Pressures
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. Minimal back pressure should be utilized to prevent glass breakage.

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