

BASF Ultramid® B3WG5 25% Glass Filled PA6 (Dry)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , 30% Glass Fiber Filled

Material Notes:

Description: 25% glass-fiber reinforced and heat aging resistant injection-molding grade, for instance, for fan impeller glass-fiber reinforced injection-molding grade for industrial articles and electrical insulating parts. Information provided by BASF

Order this product through the following link:

http://www.lookpolymers.com/polymer_BASF-Ultramid-B3WG5-25-Glass-Filled-PA6-Dry.php

Physical Properties	Metric	English	Comments
Bulk Density	0.500 - 0.800 g/cc	0.0181 - 0.0289 lb/in ³	
Density	1.32 g/cc	0.0477 lb/in ³	ISO 1183
Water Absorption	6.8 - 7.4 %	6.8 - 7.4 %	Saturation; ISO 62
Moisture Absorption at Equilibrium	2.1 - 2.5 %	2.1 - 2.5 %	23°C; 50% RH; ISO 62
	2.3 %	2.3 %	50% RH
	7.1 %	7.1 %	Saturation
Viscosity Measurement	140	140	ISO 307
Linear Mold Shrinkage	0.0035 cm/cm	0.0035 in/in	restricted
Melt Flow	72.6 g/10 min @Load 5.00 kg, Temperature 275 °C	72.6 g/10 min @Load 11.0 lb, Temperature 527 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength	30.0 MPa @Strain 1.00 %, Temperature 150 °C	4350 psi @Strain 1.00 %, Temperature 302 °F	ISO 527
	35.0 MPa @Strain 1.00 %, Temperature 120 °C	5080 psi @Strain 1.00 %, Temperature 248 °F	ISO 527
	38.0 MPa @Strain 1.00 %, Temperature 100 °C	5510 psi @Strain 1.00 %, Temperature 212 °F	ISO 527
	45.0 MPa @Strain 2.00 %, Temperature 150 °C	6530 psi @Strain 2.00 %, Temperature 302 °F	ISO 527
	60.0 MPa	8700 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 2.00 %, Temperature 120 °C	@Strain 2.00 %, Temperature 248 °F	
	65.0 MPa	9430 psi	ISO 527
	@Strain 2.00 %, Temperature 100 °C	@Strain 2.00 %, Temperature 212 °F	
	70.0 MPa	10200 psi	ISO 527
	@Strain 1.00 %, Temperature 60.0 °C	@Strain 1.00 %, Temperature 140 °F	
	83.0 MPa	12000 psi	ISO 527
	@Strain 1.00 %, Temperature 23.0 °C	@Strain 1.00 %, Temperature 73.4 °F	
	100 MPa	14500 psi	ISO 527
	@Strain 1.00 %, Temperature -20.0 °C	@Strain 1.00 %, Temperature -4.00 °F	
	100 MPa	14500 psi	ISO 527
	@Strain 2.00 %, Temperature 60.0 °C	@Strain 2.00 %, Temperature 140 °F	
	143 MPa	20700 psi	ISO 527
	@Strain 2.00 %, Temperature 23.0 °C	@Strain 2.00 %, Temperature 73.4 °F	
	170 MPa	24700 psi	ISO 527
	@Strain 2.00 %, Temperature -20.0 °C	@Strain 2.00 %, Temperature -4.00 °F	
Tensile Strength, Yield	160 MPa	23200 psi	50 mm/min; ISO 527-1/-2
Elongation at Yield	3.5 %	3.5 %	50 mm/min; ISO 527-1/-2
Modulus of Elasticity	8.00 GPa	1160 ksi	ISO 527-1/-2
Flexural Strength	220 MPa	31900 psi	at max force; ISO 178
Flexural Modulus	7.40 GPa	1070 ksi	ISO 178
Izod Impact, Notched (ISO)	12.0 kJ/m ²	5.71 ft-lb/in ²	ISO 180/A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact Unnotched	7.50 J/cm ²	35.7 ft-lb/in ²	ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	8.00 J/cm ²	38.1 ft-lb/in ²	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Mechanical Properties ^d	1.00 J/cm ² Metric	4.76 ft-lb/in ² English	Comments ^A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	1.20 J/cm ²	5.71 ft-lb/in ²	ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	20.0 - 25.0 µm/m-°C	11.1 - 13.9 µin/in-°F	DIN 11359-1/-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
CTE, linear, Transverse to Flow	60.0 - 70.0 µm/m-°C	33.3 - 38.9 µin/in-°F	DIN 11359-1/-2
	@Temperature 23.0 - 80.0 °C	@Temperature 73.4 - 176 °F	
Specific Heat Capacity	1.50 J/g-°C	0.359 BTU/lb-°F	
Thermal Conductivity	0.350 W/m-K	2.43 BTU-in/hr-ft ² -°F	DIN 52612
Melting Point	220 °C	428 °F	DIN 53765
Maximum Service Temperature, Air	145 °C	293 °F	for 50% loss of tensile strength after 20000hr
	175 °C	347 °F	for 50% loss of tensile strength after 5000hr
	200 °C	392 °F	
Deflection Temperature at 0.46 MPa (66 psi)	220 °C	428 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	210 °C	410 °F	ISO 75-1/-2
Decomposition Temperature	>= 300 °C	>= 572 °F	
UL RTI, Electrical	130 °C	266 °F	746B
	@Thickness 1.50 mm	@Thickness 0.0591 in	
UL RTI, Mechanical with Impact	95.0 °C	203 °F	764B
	@Thickness 1.50 mm	@Thickness 0.0591 in	
UL RTI, Mechanical without Impact	130 °C	266 °F	764B
	@Thickness 1.50 mm	@Thickness 0.0591 in	
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
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Electrical Properties	Metric ^{13 ohm-cm}	English ^{3 ohm-cm}	Comments
Dielectric Constant	3.8	3.8	IEC 60250
	@Frequency 1.00 Hz	@Frequency 1.00 Hz	
Dissipation Factor	0.025	0.025	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Comparative Tracking Index	450 V	450 V	Test solution A; IEC 60112

Processing Properties	Metric	English	Comments
Processing Temperature	80.0 °C	176 °F	Hopper Throat
Zone 1	260 °C	500 °F	Feed Zone
Zone 2	270 °C	518 °F	Compression
Zone 3	280 °C	536 °F	Metering-zone
Zone 4	280 °C	536 °F	Nozzle
Melt Temperature	270 - 290 °C	518 - 554 °F	Injection-molding/Extrusion
	280 °C	536 °F	Optimal
Mold Temperature	80.0 °C	176 °F	Optimal
	80.0 - 90.0 °C	176 - 194 °F	Injection-molding
Drying Temperature	80.0 °C	176 °F	
Dry Time	4 hour	4 hour	
Moisture Content	0.030 - 0.060 %	0.030 - 0.060 %	Optimal
	<= 0.15 %	<= 0.15 %	

Descriptive Properties	Value	Comments
Commercial Status	Europe	
Ignition Temperature	>400°C	ASTM D129
Peripheral screw speed	< 0.3 m/s	

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