

BASF Ultramid® A3HG7

Ultramid A3HG7 is a 35% glass fiber reinforced injection molding PA66 grade.

Physical Properties	Metric	English	Comments
Density	1.41 g/cc	0.0509 lb/in ³	ISO 1183
Water Absorption	4.7 - 5.3 %	4.7 - 5.3 %	ISO 62
Moisture Absorption at Equilibrium	1.4 - 1.8 %	1.4 - 1.8 %	23°C/50% R.H.; ISO 62
Viscosity Number	140 cm ³ /g	1.40 dl/g	ISO 307
Linear Mold Shrinkage	0.0050 cm/cm	0.0050 in/in	

Melt Flow	56.4 g/10 min @Load 5.00 kg, Temperature 275 °C	56.4 g/10 min @Load 11.0 lb, Temperature 527 °F	ISO 1133
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Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	200 MPa	29000 psi	50mm/min; ISO 527
Elongation at Yield	3.0 %	3.0 %	50mm/min; ISO 527
Modulus of Elasticity	11.2 GPa	1620 ksi	ISO 527
Flexural Strength	207 MPa	30000 psi	ISO 178
Flexural Modulus	10.0 GPa	1450 ksi	ISO 178
Izod Impact, Notched (ISO)	14.0 kJ/m ²	6.66 ft-lb/in ²	ISO 180/A
Charpy Impact Unnotched	9.50 J/cm ²	45.2 ft-lb/in ²	ISO 179/1eU

	7.50 J/cm ² @Temperature -30.0 °C	35.7 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eU
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Charpy Impact, Notched	1.30 J/cm ²	6.19 ft-lb/in ²	ISO 179/1eA
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	1.20 J/cm ² @Temperature -30.0 °C	5.71 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
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Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 60093
Dielectric Constant	3.5 @Frequency 1e+6 Hz	3.5 @Frequency 1e+6 Hz	IEC 60250
Dissipation Factor	0.020 @Frequency 1e+6 Hz	0.020 @Frequency 1e+6 Hz	

Comparative Tracking Index	550 V	550 V	Test Solution A; IEC 60112
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Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	15.0 - 20.0 $\mu\text{m/m}^\circ\text{C}$ @Temperature 23.0 - 80.0 $^\circ\text{C}$	8.33 - 11.1 $\mu\text{in/in}^\circ\text{F}$ @Temperature 73.4 - 176 $^\circ\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow	60.0 - 70.0 $\mu\text{m/m}^\circ\text{C}$ @Temperature 23.0 - 80.0 $^\circ\text{C}$	33.3 - 38.9 $\mu\text{in/in}^\circ\text{F}$ @Temperature 73.4 - 176 $^\circ\text{F}$	ISO 11359-1/-2
Specific Heat Capacity	1.50 J/g- $^\circ\text{C}$	0.359 BTU/lb- $^\circ\text{F}$	
Thermal Conductivity	0.350 W/m-K	2.43 BTU-in/hr-ft 2 - $^\circ\text{F}$	DIN 52612
Melting Point	260 $^\circ\text{C}$	500 $^\circ\text{F}$	DIN 53765
Maximum Service Temperature, Air	140 $^\circ\text{C}$	284 $^\circ\text{F}$	for 50% loss of tensile strength after 20,000 hr
	170 $^\circ\text{C}$	338 $^\circ\text{F}$	for 50% loss of tensile strength after 5,000 hr
	240 $^\circ\text{C}$	464 $^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	250 $^\circ\text{C}$	482 $^\circ\text{F}$	ISO 75
Deflection Temperature at 1.8 MPa (264 psi)	250 $^\circ\text{C}$	482 $^\circ\text{F}$	ISO 75
Flammability, UL94	HB @Thickness 1.60 mm	HB @Thickness 0.0630 in	

Processing Properties	Metric	English	Comments
Melt Temperature	280 - 300 $^\circ\text{C}$	536 - 572 $^\circ\text{F}$	Injection-molding/Extrusion
Mold Temperature	80.0 - 90.0 $^\circ\text{C}$	176 - 194 $^\circ\text{F}$	Injection-molding