

BASF Ultramid® A4H

Description: Highly heat aging resistant, medium-viscosity injection-molding grade for highly stressed parts such as bearing cages, gearwheels, spool bodies and chain drive tensioners.
Information provided by BASF

Physical Properties	Metric	English	Comments
Bulk Density	0.500 - 0.800 g/cc	0.0181 - 0.0289 lb/in ³	
Density	1.13 g/cc	0.0408 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	2.5 - 3.1 %	2.5 - 3.1 %	23°C; 50% RH; ISO 62
Water Absorption at Saturation	8.0 - 9.0 %	8.0 - 9.0 %	ISO 62
Viscosity Measurement	190	190	ISO 307
Linear Mold Shrinkage	0.0090 cm/cm	0.0090 in/in	restricted
Melt Flow	45.2 g/10 min @Load 5.00 kg, Temperature 275 °C	45.2 g/10 min @Load 11.0 lb, Temperature 527 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	85.0 MPa	12300 psi	50 mm/min; ISO 527-1/-2
Elongation at Break	25 %	25 %	Nominal, 50mm/min; ISO 527-1/-2
Elongation at Yield	4.2 %	4.2 %	50 mm/min; ISO 527-1/-2
Modulus of Elasticity	3.10 GPa	450 ksi	ISO 527-1/-2
Flexural Modulus	3.00 GPa	435 ksi	ISO 178
Izod Impact, Notched (ISO)	5.50 kJ/m ² @Temperature 23.0 °C	2.62 ft-lb/in ² @Temperature 73.4 °F	ISO 180/A
	7.00 kJ/m ² @Temperature -30.0 °C	3.33 ft-lb/in ² @Temperature -22.0 °F	ISO 180/A
Charpy Impact Unnotched	NB	NB	ISO 179/1eU
Charpy Impact, Notched	0.500 J/cm ² @Temperature -30.0 °C	2.38 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	0.570 J/cm ² @Temperature 23.0 °C	2.71 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA
Tensile Creep Modulus, 1000 hours	700 MPa @Strain <=0.5 %	102000 psi @Strain <=0.5 %	ISO 899-1

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	IEC 60093
Dielectric Constant	3.5 @Frequency 1e+6 Hz	3.5 @Frequency 1e+6 Hz	IEC 60250
Dissipation Factor	0.025 @Frequency 1e+6 Hz	0.025 @Frequency 1e+6 Hz	IEC 60250
Comparative Tracking Index	600 V	600 V	Test solution A; IEC 60112