

## Zell-Metall Engineering Plastics Zellamid 202 (PA 6)

Category : Polymer , Thermoplastic , Nylon , Nylon 6 , Nylon 6 , Impact Grade

### Material Notes:

Zellamid® 202 is a tough material with high resistance to abrasion and impact. It features good mechanical properties. By water absorption the excellent shock and vibration resistance is increased. Mechanical, electrical and dimensional properties are accordingly influenced by moisture absorption. These important characteristics add up to impressive cost / performance ratios. Typical applications for Zellamid® 202 are ball bearing races, friction bearings, pulleys, sheeves, gears, slipper blocks, vibration dampeners and absorbers, bowling pin setters, scrapers and many more.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Zell-Metall-Engineering-Plastics-Zellamid-202-PA-6.php](http://www.lookpolymers.com/polymer_Zell-Metall-Engineering-Plastics-Zellamid-202-PA-6.php)

Physical Properties	Metric	English	Comments
Density	1.13 - 1.15 g/cc	0.0408 - 0.0415 lb/in <sup>3</sup>	
Moisture Absorption at Equilibrium	2.6 - 3.4 %	2.6 - 3.4 %	Saturation at 50% RH; ISO 1110; DIN 53714
Water Absorption at Saturation	9.0 - 10 %	9.0 - 10 %	23°C; ISO 62; DIN 53495

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	150 MPa	21800 psi	H 358/30; ISO 2039; DIN 53456
Tensile Strength at Break	80.0 MPa	11600 psi	ISO 527; DIN 53455
Elongation at Break	50 - 100 %	50 - 100 %	ISO 527; DIN 53455
Tensile Modulus	3.00 GPa	435 ksi	ISO 527; DIN 53452
Izod Impact, Notched	0.0850 J/cm	0.159 ft-lb/in	ISO 180 Method A
	0.350 J/cm @Temperature -40.0 °C	0.656 ft-lb/in @Temperature -40.0 °F	ISO 180 Method A
Charpy Impact Unnotched	NB	NB	ISO 179; DIN 53453
	@Temperature -40.0 °C	@Temperature -40.0 °F	
Charpy Impact Unnotched	NB	NB	ISO 179; DIN 53453
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	7.00 J/cm <sup>2</sup>	33.3 ft-lb/in <sup>2</sup>	double V-notch, rk=1.5 mm; DIN 53753
Dart Drop, Total Energy	>= 140 J	>= 103 ft-lb	DIN 53443
	45.0 J @Temperature -20.0 °C	33.2 ft-lb @Temperature -4.00 °F	DIN 53443

Mechanical Properties	Metric	English	Comments
CTE, linear	70.0 - 100 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.9 - 55.6 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	DIN 53752
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Specific Heat Capacity	1.70 J/g- $^{\circ}\text{C}$	0.406 BTU/lb- $^{\circ}\text{F}$	DIN 52612
Thermal Conductivity	0.230 W/m-K	1.60 BTU-in/hr-ft $^2$ - $^{\circ}\text{F}$	DIN 53612 Method A
Melting Point	220 $^{\circ}\text{C}$	428 $^{\circ}\text{F}$	ISO 1218 Method A; DIN 53736
Maximum Service Temperature, Air	75.0 $^{\circ}\text{C}$	167 $^{\circ}\text{F}$	20,000 hours; 50% Tensile Strength; IEC 216; DIN 53446
	90.0 $^{\circ}\text{C}$	194 $^{\circ}\text{F}$	5000 hours; 50% Tensile Strength; IEC 216; DIN 53446
	$\leq 180$ $^{\circ}\text{C}$	$\leq 356$ $^{\circ}\text{F}$	a few hours operation
Deflection Temperature at 0.46 MPa (66 psi)	$\geq 160$ $^{\circ}\text{C}$	$\geq 320$ $^{\circ}\text{F}$	ISO 75; DIN 53461
Deflection Temperature at 1.8 MPa (264 psi)	55.0 - 75.0 $^{\circ}\text{C}$	131 - 167 $^{\circ}\text{F}$	ISO 75; DIN 53461
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+15 ohm-cm	1.00e+15 ohm-cm	IEC 167; DIN 53482
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	IEC 167; DIN 53482
Dielectric Constant	3.5	3.5	IEC 250; DIN 53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Dielectric Strength	100 kV/mm	2540 kV/in	IEC 243; DIN 53481
Dissipation Factor	0.023	0.023	IEC 250; DIN 53483
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
Comparative Tracking Index	$\geq 600$ V	$\geq 600$ V	KB Method; IEC 112; DIN 53480
	$\geq 600$ V	$\geq 600$ V	KC Method; IEC 112; VDE 0303T1

Descriptive Properties	Value	Comments
Time yield limit	2.5 MPa	100 $^{\circ}\text{C}$ , s1/1000; ISO.899 DIN.53444
VDE Fire Performance	II b	VDE 0304T3

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