

Wolf Kunststoff ZEDEX® ZX-100MT A1T Polymer Alloy, Mineral Reinforced

Category : Polymer , Thermoplastic

Material Notes:

Stiff; Hard; Very high strength; No fiber reinforcement
 Applications: Handling, Vessel and Pump, Steel and Water, Chemical Engineering, Automotive Technology, Machine Tools
 Information provided by Zedex

Order this product through the following link:

http://www.lookpolymers.com/polymer_Wolf-Kunststoff-ZEDEX-ZX-100MT-A1T-Polymer-Alloy-Mineral-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.49 g/cc	0.0538 lb/in ³	ISO 1183
Water Absorption	0.20 % @Temperature 23.0 °C	0.20 % @Temperature 73.4 °F	RMC 93%; DIN EN ISO 62
Moisture Absorption at Equilibrium	0.50 %	0.50 %	DIN EN ISO 62

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	98	98	DIN 53505
Ball Indentation Hardness	153 MPa	22200 psi	DIN 2039
Tensile Strength at Break	65.0 MPa	9430 psi	DIN EN ISO 527
Tensile Strength	67.0 MPa	9720 psi	DIN EN ISO 527
Tensile Stress	33.0 MPa @Strain 1.00 %, Time 3.60e+6 sec	4790 psi @Strain 1.00 %, Time 1000 hour	DIN 53444
Tensile Strength, Yield	53.0 MPa	7690 psi	Elastic Limit
Elongation at Break	5.3 %	5.3 %	Flexural; DIN EN ISO 178
	5.3 %	5.3 %	DIN EN ISO 527
Elongation at Yield	1.1 %	1.1 %	DIN EN ISO 527
	3.0 %	3.0 %	Elongation at Maximum Force; DIN EN ISO 527
	4.5 %	4.5 %	Flexural; DIN EN ISO 178
Tensile Modulus	4.854 GPa	704.0 ksi	DIN EN ISO 527
Flexural Strength	103 MPa	14900 psi	Outer Fiber Stress at 3.5% Outer Fiber Strain; DIN EN ISO 178
	113 MPa	16400 psi	DIN EN ISO 178

Mechanical Properties	Metric ¹⁷⁸	English ¹⁷⁸	Comments ¹⁷⁸
Flexural Modulus	3.955 GPa	573.6 ksi	DIN EN ISO 178
Compressive Strength	86.0 MPa	12500 psi	Elastic Limit
	45.0 MPa	6530 psi	
	@Time 3.60e+7 sec	@Time 10000 hour	
	78.0 MPa	11300 psi	
	@Time 360000 sec	@Time 100 hour	
	92.0 MPa	13300 psi	
	@Time 36.0 sec	@Time 0.0100 hour	
	97.0 MPa	14100 psi	DIN EN ISO 604
	@Strain 3.50 %	@Strain 3.50 %	
Compressive Modulus	4.57 GPa	663 ksi	DIN EN ISO 604
Fatigue Strength	42.0 MPa	6090 psi	1 Hz
	@# of Cycles 1.00e+6	@# of Cycles 1.00e+6	
K Factor (ISO)	1.1 µm/km	1.1 µm/km	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	5.3 µm/km	5.3 µm/km	
	@Temperature 100 °C	@Temperature 212 °F	
Charpy Impact Unnotched	5.30 J/cm ²	25.2 ft-lb/in ²	EN ISO 179/1eU
Charpy Impact, Notched	0.320 J/cm ²	1.52 ft-lb/in ²	EN ISO 179/1eA
Coefficient of Friction, Dynamic	0.070	0.070	Dry Operation
	@Temperature 100 °C	@Temperature 212 °F	
	0.11	0.11	Dry Operation
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Coefficient of Friction, Static	0.12	0.12	Dry Operation
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Creep Modulus, 1000 hours	2900 MPa	421000 psi	At 1% Deformation; DIN 53444
Limiting Pressure Velocity	0.13333 MPa-m/sec	3806.6 psi-ft/min	v = 200m/min
	0.16666 MPa-m/sec	4758.1 psi-ft/min	v = 100m/min
	0.167 MPa-m/sec	4770 psi-ft/min	v = 1m/min

Mechanical Properties	Metric	English	Comments
Compression Set	3.1 %	3.1 %	Elastic Compression Limit

Thermal Properties	Metric	English	Comments
CTE, linear	71.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	39.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO E 830
	@Temperature $\leq 100^\circ\text{C}$	@Temperature $\leq 212^\circ\text{F}$	
	107 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	59.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO E 831
	@Temperature $\leq 150^\circ\text{C}$	@Temperature $\leq 302^\circ\text{F}$	
Specific Heat Capacity	1.15 J/g- $^\circ\text{C}$	0.275 BTU/lb- $^\circ\text{F}$	DSC
Thermal Conductivity	0.280 W/m-K	1.94 BTU-in/hr-ft 2 - $^\circ\text{F}$	DIN 52612
Melting Point	250 $^\circ\text{C}$	482 $^\circ\text{F}$	DSC
Maximum Service Temperature, Air	65.0 $^\circ\text{C}$	149 $^\circ\text{F}$	Pressed Bushings
	130 $^\circ\text{C}$	266 $^\circ\text{F}$	Continuous
	150 $^\circ\text{C}$	302 $^\circ\text{F}$	Short Term (3h)
Deflection Temperature at 1.8 MPa (264 psi)	95.0 $^\circ\text{C}$	203 $^\circ\text{F}$	DIN EN ISO 75
Glass Transition Temp, Tg	80.0 $^\circ\text{C}$	176 $^\circ\text{F}$	DSC
Flammability, UL94	HB	HB	

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+14 ohm-cm	2.00e+14 ohm-cm	IEC 93
Surface Resistance	1.00e+12 ohm	1.00e+12 ohm	IEC 93
Dielectric Constant	3.4	3.4	IEC 250
	@Frequency 110 Hz	@Frequency 110 Hz	
Dielectric Strength	21.5 kV/mm	546 kV/in	IEC 243
Dissipation Factor	0.015	0.015	IEC 112
	0.091	0.091	
	@Frequency 1.00 Hz	@Frequency 1.00 Hz	

Descriptive Properties	Value	Comments
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Alignment Adjustment Descriptive Properties	Value	Nominal Scale: 1, low; 10, high Comments
Chemical Sterilization	7	Nominal Scale: 1, low; 10, high
Color	White	
Creep Resistance	4	Nominal Scale: 1, low; 10, high
Dimensional Stability with Thermal Expansion	4	Nominal Scale: 1, low; 10, high
Free from PTFE	Applicable	
Free from Silicon	Applicable	
Gamma-rays Radiation Sterilization	3	Nominal Scale: 1, low; 10, high
High Precision Bushings (negative clearance)	Applicable	
Injection Molded Parts	Applicable	
Machined Parts	Applicable	
Moist Heat Sterilization	6	Nominal Scale: 1, low; 10, high
Plastic Granules	Applicable	
Resistance Against dust, Dirt, Abrasive Substances	7	Nominal Scale: 1, low; 10, high
Resistance Against Hot Water	80	
Resistance to Chemicals	7	Nominal Scale: 1, low; 10, high
Resistant Against Disinfectant	Applicable	
Rods up to Øe (de)	Applicable	
Sheets up to Maximum Thickness	Applicable	
Sliding Velocity	150	
Suitable for Outdoor Use	8	Nominal Scale: 1, low; 10, high
Suitable for Use in Water	Applicable	
Suitable for Vacuum	Applicable	
Tubes (hollow rods) up to Øe (de)	Applicable	
UV Rays Resistance	9	Nominal Scale: 1, low; 10, high
UV-Sterilization	7	Nominal Scale: 1, low; 10, high

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