

## Wolf Kunststoff ZEDEX® ZX-530 A5D Polymer Alloy

Category : Polymer , Thermoplastic

### Material Notes:

Main Characteristics: Low Creep; Low moisture absorption; Flame retardant; Low impurity ions; Good machinability; FDA compliant LABS; Extremely low outgassing; Less expensive than PEEK; Stress resistant Applications: Chemical Engineering; Laboratory Technology; Automotive Technology; Machine Tools Information provided by Zedex

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Wolf-Kunststoff-ZEDEX-ZX-530-A5D-Polymer-Alloy.php](http://www.lookpolymers.com/polymer_Wolf-Kunststoff-ZEDEX-ZX-530-A5D-Polymer-Alloy.php)

Physical Properties	Metric	English	Comments
Density	1.51 g/cc	0.0546 lb/in <sup>3</sup>	ISO 1183
Water Absorption	0.010 % @Temperature 23.0 °C	0.010 % @Temperature 73.4 °F	RMC 93%; DIN EN ISO 62
Moisture Absorption at Equilibrium	0.050 %	0.050 %	DIN EN ISO 62

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	>= 100	>= 100	DIN 53505
Hardness, Shore D	83	83	DIN 53505
Ball Indentation Hardness	134 MPa	19400 psi	DIN 2039
Tensile Strength at Break	50.0 MPa	7250 psi	DIN EN ISO 527
Tensile Strength	50.0 MPa	7250 psi	DIN EN ISO 527
Tensile Stress	19.0 MPa @Strain 1.00 %, Time 3.60e+6 sec	2760 psi @Strain 1.00 %, Time 1000 hour	DIN 53444
Tensile Strength, Yield	47.0 MPa	6820 psi	Elastic Limit
Elongation at Break	4.5 %	4.5 %	Flexural; DIN EN ISO 178
	4.5 %	4.5 %	DIN EN ISO 527
Elongation at Yield	1.3 %	1.3 %	Elastic Yield Point
	4.5 %	4.5 %	Elongation at Maximum Force; DIN EN ISO 527
	4.9 %	4.9 %	Flexural; DIN EN ISO 178
Tensile Modulus	3.50 GPa	508 ksi	DIN EN ISO 527
	74.0 MPa	10700 psi	Outer Fiber Stress at 3.5% Outer Fiber

Flexural Strength Mechanical Properties	Metric	English	Strain: DIN EN ISO 178 Comments
	80.0 MPa	11600 psi	DIN EN ISO 178
	81.0 MPa	11700 psi	DIN EN ISO 178
Flexural Modulus	3.00 GPa	435 ksi	DIN EN ISO 178
Compressive Yield Strength	109 MPa	15800 psi	DIN EN ISO 604
Compressive Strength	71.0 MPa	10300 psi	Elastic Limit
	92.0 MPa	13300 psi	break; DIN EN ISO 604
	109 MPa	15800 psi	DIN EN ISO 604
	25.0 MPa	3630 psi	
	@Time 3.60e+7 sec	@Time 10000 hour	
	37.0 MPa	5370 psi	
	@Time 360000 sec	@Time 100 hour	
	76.0 MPa	11000 psi	
	@Time 36.0 sec	@Time 0.0100 hour	
	29.0 MPa	4210 psi	DIN EN ISO 604
	@Strain 3.50 %	@Strain 3.50 %	
Compressive Modulus	3.50 GPa	508 ksi	DIN EN ISO 604
Fatigue Strength	40.0 MPa	5800 psi	1 Hz
	@# of Cycles 1.00e+6	@# of Cycles 1.00e+6	
K Factor (ISO)	0.50 $\mu\text{m}/\text{km}$	0.50 $\mu\text{m}/\text{km}$	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	1.1 $\mu\text{m}/\text{km}$	1.1 $\mu\text{m}/\text{km}$	
	@Temperature 100 °C	@Temperature 212 °F	
	3.3 $\mu\text{m}/\text{km}$	3.3 $\mu\text{m}/\text{km}$	
	@Temperature 200 °C	@Temperature 392 °F	
	4.2 $\mu\text{m}/\text{km}$	4.2 $\mu\text{m}/\text{km}$	
	@Temperature 240 °C	@Temperature 464 °F	
Charpy Impact Unnotched	2.80 J/cm <sup>2</sup>	13.3 ft-lb/in <sup>2</sup>	EN ISO 179/1eU
Charpy Impact, Notched	0.917 J/cm <sup>2</sup>	4.36 ft-lb/in <sup>2</sup>	EN ISO 179/1eA
	0.11	0.11	

Coefficient of Friction, Dynamic Mechanical Properties	Metric @ Temperature 100 °C	English @ Temperature 212 °F	Dry Operation Comments
	0.17	0.17	Dry Operation
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Coefficient of Friction, Static	0.18	0.18	Dry Operation
	@Temperature 20.0 °C	@Temperature 68.0 °F	
Tensile Creep Modulus, 1000 hours	1900 MPa	276000 psi	At 1% Deformation; DIN 53444
Limiting Pressure Velocity	0.400 MPa-m/sec	11400 psi-ft/min	v = 200m/min
	0.624 MPa-m/sec	17800 psi-ft/min	v = 1m/min
	0.66666 MPa-m/sec	19033 psi-ft/min	v = 100m/min
	1.26 MPa-m/sec	36000 psi-ft/min	v = 10m/min
Compression Set	6.5 %	6.5 %	
	11 %	11 %	Nominal Compressive Strain at Break; DIN EN ISO 604
	31 %	31 %	Nominal Compressive Strain at Compressive Strength; DIN EN ISO 604
	31 %	31 %	Nominal Compressive Yield Strain; DIN EN ISO 604

Thermal Properties	Metric	English	Comments
CTE, linear	60.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	33.3 $\mu\text{in}/\text{in}\cdot\text{°F}$	ISO E 830
	@Temperature $\leq 100$ °C	@Temperature $\leq 212$ °F	
	90.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	50.0 $\mu\text{in}/\text{in}\cdot\text{°F}$	ISO E 831
	@Temperature $\leq 150$ °C	@Temperature $\leq 302$ °F	
Specific Heat Capacity	0.890 J/g-°C	0.213 BTU/lb-°F	DSC
Melting Point	320 °C	608 °F	DSC
Maximum Service Temperature, Air	90.0 °C	194 °F	Pressed Bushings
	240 °C	464 °F	Continuous
	290 °C	554 °F	Short Term (3h)
Deflection Temperature at 1.8 MPa (264 psi)	135 °C	275 °F	DIN EN ISO 75
Glass Transition Temp, Tg	110 °C	230 °F	DSC

Thermal Properties Flammability, UL 94	Metric	English	Comments
Oxygen Index	47 %	47 %	DIN EN ISO 4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	4.50e+16 ohm-cm	4.50e+16 ohm-cm	IEC 93
Surface Resistance	4.40e+16 ohm	4.40e+16 ohm	IEC 93
Dielectric Constant	4.1 @Frequency 110 Hz	4.1 @Frequency 110 Hz	IEC 250
Dielectric Strength	24.0 kV/mm	610 kV/in	IEC 243
Dissipation Factor	0.020	0.020	IEC 112
	0.055 @Frequency 1.00 Hz	0.055 @Frequency 1.00 Hz	
Comparative Tracking Index	130 V	130 V	IEC 112

Descriptive Properties	Value	Comments
Alignment Adjustment	2	Nominal Scale: 1, low; 10, high
Chemical Sterilization	10	Nominal Scale: 1, low; 10, high
Color	Beige	
Creep Resistance	4	Nominal Scale: 1, low; 10, high
Dimensional Stability with Thermal Expansion	4	Nominal Scale: 1, low; 10, high
FDA Compliant	Applicable	
Free from Silicon	Applicable	
Gamma-rays Radiation Sterilization	4	Nominal Scale: 1, low; 10, high
High Precision Bushings (negative clearance)	Applicable	
Injection Molded Parts	Applicable	
Machined Parts	Applicable	
Moist Heat Sterilization	7	Nominal Scale: 1, low; 10, high
Plastic Granules	Applicable	
Rate of Desorption	2.8E-07	a = .44

<b>Descriptive Properties</b>	<b>Value</b>	<b>Comments</b>
Resistance Against Hot Water	140	
Resistance to Chemicals	10	Nominal Scale: 1, low; 10, high
Resistant Against Disinfectant	Applicable	
Rods up to Øe (de)	Applicable	
ROHS/WEEE	Applicable	
Sheets up to Maximum Thickness	Applicable	
Sliding Velocity	300	
Suitable for Outdoor Use	7	Nominal Scale: 1, low; 10, high
Suitable for Use in Water	Applicable	
Suitable for Vacuum	Applicable	
UV Rays Resistance	8	Nominal Scale: 1, low; 10, high
UV-Sterilization	7	Nominal Scale: 1, low; 10, high

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