

Wolf Kunststoff ZEDEX® ZX-530EL3 066 Polymer Alloy, Carbon Fiber Reinforced

Category : Polymer , Thermoplastic

Material Notes:

Main Characteristics: Low thermal expansion; High rigidity; High yield stress; High wear resistance; Low friction; Stress

Resistant Applications: Chemical Engineering; Laboratory Technology; Automitve Technology; Machine Tools Information provided by Zedex

Order this product through the following link:

http://www.lookpolymers.com/polymer_Wolf-Kunststoff-ZEDEX-ZX-530EL3-066-Polymer-Alloy-Carbon-Fiber-Reinforced.php

Physical Properties	Metric	English	Comments
Density	1.47 g/cc	0.0531 lb/in ³	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	86	86	DIN 53505
Ball Indentation Hardness	157 MPa	22800 psi	DIN 2039
Tensile Strength at Break	79.0 MPa	11500 psi	DIN EN ISO 527
Tensile Strength	79.0 MPa	11500 psi	DIN EN ISO 527
Tensile Stress	22.0 MPa @Strain 1.00 %, Time 3.60e+6 sec	3190 psi @Strain 1.00 %, Time 1000 hour	DIN 53444
Tensile Strength, Yield	50.6 MPa	7340 psi	Elastic Limit
Elongation at Break	5.0 %	5.0 %	Flexural; DIN EN ISO 178
	5.0 %	5.0 %	DIN EN ISO 527
Elongation at Yield	2.1 %	2.1 %	Elastic Yield Point
	3.7 %	3.7 %	Flexural; DIN EN ISO 178
	5.0 %	5.0 %	Elongation at Maximum Force; DIN EN ISO 527
Tensile Modulus	3.94 GPa	571 ksi	DIN EN ISO 527

Mechanical Properties	Metric	English	Comments
Flexural Strength	116 MPa	16800 psi	Stress at 3.5% Outer Fiber Strain, DIN EN ISO 178
	116 MPa	16800 psi	DIN EN ISO 178
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Flexural Modulus	4.356 GPa	631.8 ksi	DIN EN ISO 178
Compressive Strength	70.0 MPa	10200 psi	Elastic Limit
	150 MPa	21800 psi	break; DIN EN ISO 604
	150 MPa	21800 psi	DIN EN ISO 604
	30.0 MPa	4350 psi	
	@Time 3.60e+7 sec	@Time 10000 hour	
	60.0 MPa	8700 psi	
	@Time 360000 sec	@Time 100 hour	
	75.0 MPa	10900 psi	
	@Time 36.0 sec	@Time 0.0100 hour	
	46.0 MPa	6670 psi	DIN EN ISO 604
	@Strain 3.50 %	@Strain 3.50 %	
Compressive Modulus	3.50 GPa	508 ksi	DIN EN ISO 604
Fatigue Strength	41.0 MPa	5950 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 100 °C	@Temperature 212 °F	
	1.0 $\mu\text{m}/\text{km}$	1.0 $\mu\text{m}/\text{km}$	
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	4.3 $\mu\text{m}/\text{km}$	4.3 $\mu\text{m}/\text{km}$	
	@Temperature 200 °C	@Temperature 392 °F	
	7.7 $\mu\text{m}/\text{km}$	7.7 $\mu\text{m}/\text{km}$	
	@Temperature 240 °C	@Temperature 464 °F	
Charpy Impact Unnotched	1.30 J/cm ²	6.19 ft-lb/in ²	EN ISO 179/1eU
Charpy Impact, Notched	0.550 J/cm ²	2.62 ft-lb/in ²	EN ISO 179/1eA
Coefficient of Friction, Dynamic	0.15	0.15	Dry Operation

Mechanical Properties	@Temperature 100 °C Metric	@Temperature 212 °F English	Comments
	0.16	0.16	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	2180 MPa	316000 psi	At 1% Deformation; DIN 53444
Limiting Pressure Velocity	0.06667 MPa-m/sec	1903 psi-ft/min	v = 200m/min
	0.200 MPa-m/sec	5710 psi-ft/min	v = 100m/min
	0.430 MPa-m/sec	12300 psi-ft/min	v = 1m/min
	0.915 MPa-m/sec	26100 psi-ft/min	v = 10m/min
Compression Set	5.0 %	5.0 %	Elastic Compression Limit
	7.2 %	7.2 %	Nominal Compressive Yield Strain; DIN EN ISO 604
	30 %	30 %	Nominal Compressive Strain at Compressive Strength; DIN EN ISO 604

Thermal Properties	Metric	English	Comments
CTE, linear	38.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	21.1 $\mu\text{in}/\text{in}\cdot\text{°F}$	ISO E 830
	@Temperature ≤ 100 °C	@Temperature ≤ 212 °F	
	50.0 $\mu\text{m}/\text{m}\cdot\text{°C}$	27.8 $\mu\text{in}/\text{in}\cdot\text{°F}$	ISO E 831
	@Temperature ≤ 150 °C	@Temperature ≤ 302 °F	
Specific Heat Capacity	0.840 J/g-°C	0.201 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
	260 °C	500 °F	Short Term (3h)
Deflection Temperature at 1.8 MPa (264 psi)	260 °C	500 °F	DIN EN ISO 75
Glass Transition Temp, Tg	90.0 °C	194 °F	DSC
Flammability, UL94	V-0	V-0	

Electrical Properties	Metric	English	Comments
Volume Resistivity	71000 ohm-cm	71000 ohm-cm	IEC 93
Surface Resistance	69000 ohm	69000 ohm	IEC 93
Dielectric Constant	4.3	4.3	IEC 250
	@Frequency 110 Hz	@Frequency 110 Hz	
Dielectric Strength	0.100 kV/mm	2.54 kV/in	IEC 243
Dissipation Factor	0.025	0.025	IEC 112
	0.064	0.064	
	@Frequency 1.00 Hz	@Frequency 1.00 Hz	

Descriptive Properties	Value	Comments
Alignment Adjustment	2	Nominal Scale: 1, low; 10, high
Chemical Sterilization	10	Nominal Scale: 1, low; 10, high
Color	Grey	
Creep Resistance	7	Nominal Scale: 1, low; 10, high
Dimensional Stability with Thermal Expansion	7	Nominal Scale: 1, low; 10, high
Free from Silicon	Applicable	
Gamma-rays Radiation Sterilization	4	Nominal Scale: 1, low; 10, high
Injection Molded Parts	Applicable	
Machined Parts	Applicable	
Moist Heat Sterilization	6	Nominal Scale: 1, low; 10, high
Plastic Granules	Applicable	
Rate of Desorption	3.12E-07	a = .49
Resistance Against dust, Dirt, Abrasive Substances	6	Nominal Scale: 1, low; 10, high
Resistance Against Hot Water	140	
Resistance to Chemicals	9	Nominal Scale: 1, low; 10, high
Resistant Against Disinfectant	Applicable	
Rods up to Øe (de)	Applicable	
Sheets up to Maximum Thickness	Applicable	

Descriptive Properties	Value	Comments
Suitable for Outdoor Use	7	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	8	Nominal Scale: 1, low; 10, high
UV-Sterilization	7	Nominal Scale: 1, low; 10, high

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