Wolf Kunststoff ZEDEX® ZX-410 A4A Polymer Alloy

Category : Polymer , Thermoplastic

Material Notes:

ZX-410 is a bearing material with excellent properties and a very affordable price.Main Characteristics: Hard, Stiff, Tough; High dimensional stability; High chemical resistance; High water resistance;; Very high UV-and radiation resistance; Good machinability; Cheaper than PEEK; Suitable for vacuum; Stress resistantApplications: Handling; Shipbuilding; Automitve Technology; Machine Tools; Drive Technology; Railway TechnologyInformation provided by Zedex

Order this product through the following link:
http://www.lookpolymers.com/polymer_Wolf-Kunststoff-ZEDEX-ZX-410-A4A-Polymer-Alloy.php

Physical Properties	Metric	English	Comments
Density	1.33 g/cc	0.0480 lb/in³	ISO 1183
Water Absorption	0.60 % @Temperature 23.0 °C	0.60 % @Temperature 73.4 °F	RMC 93%; DIN EN ISO 62
Moisture Absorption at Equilibrium	1.4 %	1.4 %	DIN EN ISO 62

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	98	98	DIN 53505
Hardness, Shore D	85	85	DIN 53505
Ball Indentation Hardness	159 MPa	23100 psi	DIN 2039
Tensile Strength at Break	82.0 MPa	11900 psi	DIN EN ISO 527
Tensile Strength	101 MPa	14600 psi	DIN EN ISO 527
Tensile Stress	40.0 MPa @Strain 1.00 %, Time 3.60e+6 sec	5800 psi @Strain 1.00 %, Time 1000 hour	DIN 53444
Tensile Strength, Yield	71.0 MPa	10300 psi	Elastic Limit
	101 MPa	14600 psi	DIN EN ISO 527
Elongation at Break	25 %	25 %	
	25 %	25 %	DIN EN ISO 527
Elongation at Yield	1.5 %	1.5 %	Elastic Yield Point
	5.5 %	5.5 %	Elongation at Maximum Force; DIN EN ISO 527
	5.5 %	5.5 %	DIN EN ISO 527

Mechanical Properties	Metric	English	Comments
Tensile Modulus	3.368 GPa	488.5 ksi	DIN EN ISO 527
Flexural Strength	89.0 MPa	12900 psi	Outer Fiber Stress at 3.5% Outer Fiber Strain; DIN EN ISO 178
	126 MPa	18300 psi	DIN EN ISO 178
Flexural Modulus	2.90 GPa	421 ksi	DIN EN ISO 178
Compressive Yield Strength	142 MPa	20600 psi	DIN EN ISO 604
Compressive Strength	111 MPa	16100 psi	Elastic Limit
	54.0 MPa @Time 3.60e+7 sec	7830 psi @Time 10000 hour	
	99.0 MPa @Time 360000 sec	14400 psi @Time 100 hour	
	119 MPa @Time 36.0 sec	17300 psi @Time 0.0100 hour	
	135 MPa @Strain 3.50 %	19600 psi @Strain 3.50 %	DIN EN ISO 604
Compressive Modulus	4.70 GPa	682 ksi	DIN EN ISO 604
Fatigue Strength	33.0 MPa @# of Cycles 1.00e+6	4790 psi @# of Cycles 1.00e+6	1 Hz
K Factor (ISO)	2.3 µm/km @Temperature 20.0 °C	2.3 µm/km @Temperature 68.0 °F	
	3.0 µm/km @Temperature 200 °C	3.0 µm/km @Temperature 392 °F	
	3.3 µm/km @Temperature 100 °C	3.3 µm/km @Temperature 212 °F	
	14.9 µm/km @Temperature 240 °C	14.9 µm/km @Temperature 464 °F	
Charpy Impact Unnotched	NB	NB	EN ISO 179/1eU
Charpy Impact, Notched	1.34 J/cm²	6.38 ft-lb/in²	EN ISO 179/1eA
Coefficient of Friction, Dynamic	0.16	0.16	Dry Operation

Mechanical Properties	Metric	English	Comments
	@Temperature 20.0 °C	@Temperature 68.0 °F	
	0.23 @Temperature 100 °C	0.23 @Temperature 212 °F	Dry Operation
Coefficient of Friction, Static	0.20 @Temperature 20.0 °C	0.20 @Temperature 68.0 °F	Dry Operation
Tensile Creep Modulus, 1000 hours	4015 MPa	582300 psi	At 1% Deformation; DIN 53444
Limiting Pressure Velocity	0.13333 MPa-m/sec	3806.6 psi-ft/min	v = 200m/min
	0.550 MPa-m/sec	15700 psi-ft/min	v = 100m/min
	0.64383 MPa-m/sec	18381 psi-ft/min	v = 1m/min
	1.633 MPa-m/sec	46630 psi-ft/min	v = 10m/min
Compression Set	1.8 %	1.8 %	Elastic Compression Limit
	2.7 %	2.7 %	Nominal Compressive Yield Strain; DIN EN ISO 604
	28 %	28 %	Nominal Compressive Strain at Break; DIN EN ISO 604

Thermal Properties	Metric	English	Comments
CTE, linear	40.0 µm/m-°C @Temperature <=100 °C	22.2 µin/in-°F @Temperature <=212 °F	ISO E 830
	58.0 µm/m-°C @Temperature <=150 °C	32.2 µin/in-°F @Temperature <=302 °F	ISO E 831
Specific Heat Capacity	1.85 J/g-°C	0.442 BTU/lb-°F	DSC
Thermal Conductivity	0.250 W/m-K	1.74 BTU-in/hr-ft²-°F	DIN 52612
Melting Point	320 °C	608 °F	DSC
Maximum Service Temperature, Air	150 °C	302 °F	Pressed Bushings
	180 °C	356 °F	Continuous
	200 °C	392 °F	Short Term (3h)
Deflection Temperature at 1.8 MPa (264 psi)	195 °C	383 °F	DIN EN ISO 75
Glass Transition Temp, Tg	210 °C	410 °F	DSC
Flammability, UL94	V-0	V-0	

Thermal Properties	Metric	English	Comments
Oxygen Index	41 %	41 %	ISO 4589

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+16 ohm-cm	>= 1.00e+16 ohm-cm	IEC 93
Surface Resistance	>= 1.00e+16 ohm	>= 1.00e+16 ohm	IEC 93
Dielectric Constant	3.15 @Frequency 110 Hz	3.15 @Frequency 110 Hz	IEC 250
Dielectric Strength	30.0 kV/mm	762 kV/in	IEC 243
Dissipation Factor	0.00050	0.00050	IEC 112
	0.055 @Frequency 1.00 Hz	0.055 @Frequency 1.00 Hz	
Comparative Tracking Index	150 V	150 V	IEC 112

Descriptive Properties	Value	Comments
Alignment Adjustment	4	Nominal Scale: 1, low; 10, high
Chemical Sterilization	7	Nominal Scale: 1, low; 10, high
Color	Yellow	
Creep Resistance	6	Nominal Scale: 1, low; 10, high
Dimensional Stability with Thermal Expansion	6	Nominal Scale: 1, low; 10, high
Free from Silicon	Applicable	
Gamma-rays Radiation Sterilization	7	Nominal Scale: 1, low; 10, high
High Precision Bushings (negative clearance)	Applicable	
Injection Molded Parts	Applicable	
Machined Parts	Applicable	
Moist Heat Sterilization	8	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	125	
Resistance to Chemicals	6	Nominal Scale: 1, low; 10, high

Descriptive Properties	Value	Comments
Resistant Against Disinfectant	Applicable	
Rods up to Øe (de)	Applicable	
ROHS/WEEE	Applicable	
Sheets up to Maximum Thickness	Applicable	
Sliding Velocity	100	
Suitable for Outdoor Use	8	Nominal Scale: 1, low; 10, high
Tubes (hollow rods) up to Øe (de)	Applicable	
UV Rays Resistance	9	Nominal Scale: 1, low; 10, high
UV-Sterilization	10	Nominal Scale: 1, low; 10, high

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