

# MATERIAL DATASHEET

## ZX-200LT 3D TRIBOFILAMENT



**PROVISIONALLY**

### Description

ZX-200 is a compound based on PK (polyketone) and, like PEEK (polyetheretherketone), belongs to the group of polyketones. ZX-200 is comparable to PPS in terms of its media and hydrolysis resistance, and comparable to PEEK in the case of common chemicals. It can be defined as a superior acetal (POM) due to its excellent tensile strength to yield elongation ratio and higher continuous service temperature. ZX-200 enables durable solutions for components that have to be elastically deformed under load, e.g. for seals and rollers, but also for other machine components such as gears and bushings.

### Properties

- Low density
- Cost efficient
- Good mech. properties
- High dyn. resilience
- Low creep
- High mechanical damping
- Environmentally friendly
- Good tribo. properties
- Extremely abrasion resistant
- High chemical resistance

- Very good hydrolysis resistance
- Gamma/steam sterilizable

### Resistances

**Lubricants and fuels**  
resistant

**Chemicals, resistant**  
aromatic and aliphatic  
Hydrocarbons, weak acids and alkalis

**Chemicals, unstable**  
strong acids and alkalis

### Water

max. water absorption: 0.5 %  
Resistant up to max. 100 °C

### Reaction to fire

Classification: HB (UL94)

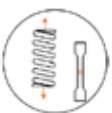



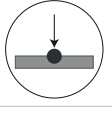
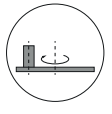

### Conformities

- LABS
- FDA & EU
- KTW

Properties	Symbol   Unit	Standard	Value
<b>Filament data</b>			
Diameter	- mm	-	1,75
Tolerance of the diameter	- mm	-	±0,05
Weight per metre (theoretical)	- g/m	-	2,93



Values determined on printed test specimens.  
Filament undried – Alignment: horizontal/upright – slicing 45°

	Properties	Symbol   Unit		Standard	Value (horizontal)	Value (upright)
	Material properties					
	Filament moisture content during printing	w	%	DIN EN ISO 15512	0,25	0,25
	Thermal post-treatment (annealing)	-	-	-	no	no
	3D printing orientation	-	-	-	XY	ZX
	Tensile modulus	E <sub>t</sub>	MPa	DIN EN ISO 527-2/1B/1	-	-
	Tensile strength at yield	σ <sub>y</sub>	MPa	DIN EN ISO 527-2/1B/5	36,27	30,30
	Tensile strain at yield	ε <sub>y</sub>	%	DIN EN ISO 527-2/1B/5	19,18	9,84
	Tensile strength	σ <sub>m</sub>	MPa	DIN EN ISO 527-2/1B/5	36,27	30,30
	Elongation at tensile strength	ε <sub>m</sub>	%	DIN EN ISO 527-2/1B/5	19,18	9,84
	Tensile strength at break	σ <sub>b</sub>	MPa	DIN EN ISO 527-2/1B/5	17,50	30,29
	Elongation at break	ε <sub>b</sub>	%	DIN EN ISO 527-2/1B/5	39,19	9,92
	Impact resistance notched Charpy	α <sub>cN</sub>	kJ/m <sup>2</sup>	DIN EN ISO 179	-	-
	Impact resistance un-notched Charpy	α <sub>cU</sub>	kJ/m <sup>2</sup>	DIN EN ISO 179	-	-
	Ball indentation hardness	HB	N/mm <sup>2</sup>	DIN 2039 H358/30	48,18	34,57
	Specific wear rate p = 1N / mm <sup>2</sup> ; v = 100m / min; 100Cr6, dry-running	K	mm <sup>3</sup> /km * 10 <sup>-7</sup>	ASTM G99:2000	-	-
	Specific wear rate p = 10N / mm <sup>2</sup> ; v = 4 m / min; 100Cr6, dry-running	K	mm <sup>3</sup> /km * 10 <sup>-7</sup>	ASTM G99:2000	-	-
	Annealing shrinkage 125 ° C, length	-	%	-	2,5	2,5
	Annealing shrinkage 125 ° C, width	-	%	-	2,5	2,5
	Annealing shrinkage 125 ° C, thickness	-	%	-	2,6	2,6