

## TZM ROD PRODUCTS MATERIAL DATA SHEET

Elmet Technologies manufactures high quality TZM rods for use in furnace components, injection molding tooling, metalworking tools, X-ray targets, and other applications that require high strength and creep resistance at high temperatures.

### DIMENSIONAL PROPERTIES

#### STANDARD PRODUCT SIZES

Diameter	0.125 – 0.625"	3 – 16 mm	>0.625 – 1.25"	>16 – 32 mm
Diameter tolerance Black/cleaned Ground	± 0.010" ± 0.002"	± 0.25 mm ± 0.05 mm	± 0.015" ± 0.005"	± 0.38 mm ± 0.13 mm
Length	0.5 – 92"	12.7 – 2350 mm	0.5 – 36"	12.7 – 910 mm
Length tolerance <12" (305 mm) 12-24" (305-610 mm) >24" (610 mm)	± 0.015" ± 0.015" ± 0.0625"	± 0.38 mm ± 0.38 mm ± 1.59 mm	± 0.015" ± 0.030" ± 0.0625"	± 0.38 mm ± 0.76 mm ± 1.59 mm
Straightness deviation	≤ 0.050"/ft	≤ 4.17 mm/m	≤ 0.050"/ft	≤ 4.17 mm/m

Other sizes, tolerances, and properties may be available as special order

### CHEMICAL COMPOSITION

Mo	≥ 99.0 wt%	K	≤ 30 ppm
Ti	0.4 – 0.55 wt%	N	≤ 20 ppm
Zr	0.06 – 0.12 wt%	Ni	≤ 50 ppm
C	100 – 400 ppm	O	≤ 500 ppm
Cr	≤ 50 ppm	Si	≤ 25 ppm
Fe	≤ 100 ppm	W	≤ 300 ppm

All other metallic elements are contained at ≤ 20 ppm  
Other chemistries may be available as special order  
All products are compliant with EU RoHS Directive 2002/95/EC, 2011/65/EU

[www.elmettechnologies.com](http://www.elmettechnologies.com)