Abbreviated Name	EN Norm	ASTM / AISI	AFNOR	DIN Abbreviation	ISO	Other

Tungsten wire 99.99%

Chemical analysis by European Norm EN 10088-1 in mass percentage

Al	Cr	Cu	Fe	K	Mo	Ni	Si
0.0001	0.0003	0.0001	0.0008	0.0001	0.0012	0.0002	0.0001

C	H	N	O	Cd	Hg	Pb	W
0.0006		0.0001	0.0002	0.0001		0.0001	Rest

Diameter 0.02 – 4.00 mm

Application
Tungsten is applied whenever high temperatures are a deciding factor. In terms of resisting heat, no other metal can compare. Out of all the metals, Tungsten has the highest melting point and consequently, it also has the highest application temperature. The very modest coefficient of thermal expansion and high form retention are quite unique. Tungsten is virtually indestructible. Subsequently, high-temperature stove parts, lamp components, and medicinal- and thin-film technology components are manufactured out of Tungsten.

Resistance to corrosion
Tungsten again reveals itself as an extraordinary metal, when analyzed chemically. At a relative humidity below 60%, Tungsten is corrosion resistant. At higher humidity levels, heat tinting begins to take place. This occurs less distinctly than with Molybdenum. Most acids and bases have no effect on Tungsten. Mineral acids, fluoric acid, and even aqua regia are only able to attack slowly. Tungsten will however, quickly dissolve in a solution of saltpeter and fluoric acid.

Weldability
Due to its thermal resistance, Tungsten cannot be welded. Instead, electrodes for different welding processes, for example resistance welding (WIG / TIG), are made out of Tungsten. This is especially the case when materials like copper, bronze or brass are welded.

Thermal resistance, mechanical and physical properties
Tungsten has exceptionally high thermal resilience and density. Out of all the metals, it has the highest melting point at between 3387° and 3422°C. Tungsten boils at about 5900°C.
Tungsten wire achieves high mechanical strengths depending on its diameter. Furthermore it exhibits high stiffness, a low coefficient of thermal expansion, and paramagnetic properties, allowing it to be attracted by magnets, but not act as one.

Surface finish

Drawn	Chemically purged	0.005 – 0.999 mm
Surface Ground	Chemically purged	1.000 – 1.500 mm

Delivery mode

As a ring

On assorted spools

Straightened

Axles

Diameter tolerances

Diameter (mm)	Tolerance (%)	Tolerance (µ)
0.005 – 0.249	± 2.0	
0.250 – 0.399	± 1.0	
0.400 – 1.500	± 1.5	

Mechanical Properties

Condition at delivery (mm)	Ultimate Tensile strength (N/mm^2)
0.005 – 0.019	3200 – 4330
0.020 – 0.099	2260 – 3730
0.100 – 0.199	2260 – 2940
0.200 – 0.399	2060 – 3010
0.400 – 0.599	2060 – 3010
0.600 – 0.799	1880 – 2820
0.800 – 1.299	1690 – 2820
1.300 – 1.500	1690 – 2650

Physical Properties

Density		19.28	g/cm^3
Coefficient of Thermal Expansion	20 °C – 200 °C	4.30	$10^{-6}/K$
Specific Heat Capacity	20 °C	138.00	J/kgK
Thermal Conductivity	20 °C	177.00	W/mK
Specific Electric Resistance	300 °K	0.05	$\Omega\ mm^2/m$
	500 °K	0.10	$\Omega\ mm^2/m$
	1000 °K	0.25	$\Omega\ mm^2/m$
	1500 °K	0.40	$\Omega\ mm^2/m$
	2000 °K	0.57	$\Omega\ mm^2/m$
	2500 °K	0.74	$\Omega\ mm^2/m$
	3000 °K	0.93	$\Omega\ mm^2/m$
Young's Modulus	20 °C	410.00	GPa