

TECHNICAL DATA SHEET

TUNGSTEN

DESCRIPTION:

Tungsten is a chemical element identified by the symbol W. Of all the elements discovered, tungsten is most remarkable for the characteristics of having the highest melting point at 3410°C. In its pure form tungsten's density is 1.7 times that of lead. Furthermore, the element has the lowest vapor pressure and the highest boiling point at 5555°C of all the elements. Tungsten also has the lowest coefficient of thermal expansion of all the pure elements. Tungsten has found wide use as an additive to steel to enhance its physical properties and as an alloy with nickel, copper and iron to provide high density machinable materials



Benefits

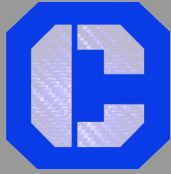
- Highest melting temp of all refractory metals
- Lowest vapor pressure
- Highest tensile strength at temperatures over 3002°F
- Low coefficient of thermal expansion
- High dimensional stability

Typical Applications

- High-temperature furnace components
- Glass to metal seals
- Electronics
- Medical Devices
- Welding Electrodes
- Electron and television tubes
- Metal evaporation work
- Filaments for electric lamps
- High-speed tool steels

Technical Specifications

Typical Physical Properties		
Type	Unit	Value
Density	lb/in ³ gm cm ³	0.70 19.27
Melting Point	°F °C	6170 3410
Electrical Resistivity	Micro-ohm-cm	5.50
Thermal Conductivity @20°C	W/(w-k)	164
Specific Heat	Cal/gm/°C	0.032
Coefficient of Linear Thermal Expansion @20°C	ppm/°F	2.7
	ppm/°C	4.6
Typical Hardness	DPH (Vickers) RC	460
Modulus of Elasticity	KSI (GPa)	58 (405)



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Chemical Composition (%)	
Chemical Contents	Tungsten
Tungsten	99.95%
Carbon	0.01%
Oxygen	0.01%
Nitrogen	0.01%
Iron	0.01%
Nickel	0.01%
Silicon	0.01%