

## TUNGSTEN ALLOYS

Eagle Alloys Corporation can offer a wide variety of High Density Machinable Tungsten Alloy sizes and compositions for immediate shipping or we can supply custom grades, shapes and finished parts with a short lead time. Eagle Alloys can supply alloys ranging from 90% to 97% Tungsten and contain nickel, copper and or iron binders for applications where high density and machinability are required. We can supply magnetic as well as non-magnetic Tungsten Alloys. Eagle Alloys Corporation is capable of supplying raw material or finished parts as well as custom grades to our customer's specifications.

Eagle Alloys supplies DRC Conflict Free material only.

Please see our chart of standard grades of Tungsten Alloys and minimum physical properties

EA Tungsten Alloy Grades	EA17	EA17M	EA17.5	EA17.5M	EA17.7	EA18	EA18M	EA18.5M
W Content, nom. (Wt%)	90	90	92.5	92.5	93	95	95	97
Binder Elements	6%Ni + 4%Cu	7%Ni + 3% Fe	5.25%Ni + 2.25%Cu	5.25%Ni + 2.25%Fe	Ni + Fe + Mo	3.5%Ni + 1.5%Cu	3.5%Ni + 1.5%Fe	2.1%Ni + 0.9%Fe
Density Gms/cc	17 nom. (16.85-17.30)	17 nom. (16.85-17.30)	17.5 nom. (17.15- 17.85)	17.5 nom. (17.15-17.85)	17.7 nom.	18 nom. (17.75- 18.35)	18 nom. (17.75-18.35)	18.5 nom. (18.25- 18.85)
Density Lbs./cu in.	0.61	0.61	0.63	0.63	0.64	0.65	0.65	0.67
Ultimate Tensile Strength	94ksi/ 648Mpa min.	110ksi/ 758Mpa min.	94ksi/ 648Mpa min.	110ksi/ 758Mpa min	Produced to Customer's Specifications	94ksi/ 648Mpa min.	105ksi/ 724Mpa min.	100ksi/ 689Mpa min.
Yield Strength at 0.2% Offset	94ksi/ 648Mpa min.	110ksi/ 758Mpa min.	94ksi/ 648Mpa min.	110ksi/ 758Mpa min		94ksi/ 648Mpa min.	105ksi/ 724Mpa min.	100ksi/ 689Mpa min.
Elongation % min.	2% min.	5%min.	2% min.	5%min.		1% min.	3%	2%
Hardness (HRC) max. Unworked (As Sintered or Annealed)	32 max	32 max	33 max	33max		34 max	34 max	35 max
Coefficient of Thermal Expansion x 10 <sup>-6</sup> /°C	4~6	4~6	4~6	4~6		4~6	4~6	4~6
Magnetic Properties	None	Slight	None	Slight	Slight	None	Slight	Slight
ASTM-B-777-15	Class 1	Class 1	Class 1	Class 2	N/A	Class 3	Class 3	Class 4
AMS-T-21014	Class 1	Class 1	Class 1	Class 2	N/A	Class 3	Class 3	Class 4
MIL-T-21014D	Class 1	Class 1	Class 1	Class 2	N/A	Class 3	Class 3	Class 4
AMS 7725E	Class 1 Type 1	Class 1 Type 2	Class 1 Type 1	Class 2 Type 2	N/A	Class 3 Type 1	Class 3 Type 2	Class 4 Type 2

\*Note: Tungsten Alloy materials can be fabricated and custom produced to customer's specifications. For mechanically worked material, the hardness can be as high as HRC49. Above data is for informational purposes only. Eagle Alloys is not liable for accuracy of these contents or applications. Finished part drawings may be forwarded to a third party of outsourcing.