

The best choice for extreme applications...

Midwest Tungsten Service heavy metal tungsten alloys are the perfect choice where high density and machinability are important. Weights, ballast, radiation shielding, crankshaft inserts, boring bars, medical imaging, dart shafts, lead replacement are all applications where MTS heavy tungsten alloys can do the job. Check the options and properties below to determine which of our alloys is best suited to your needs. We carry many sizes in stock for immediate delivery. Other sizes and shapes can be supplied with short lead times. We can also manufacture parts from these materials to your specifications.



MTS Alloy	MT-17C	MT-17F	MT-175	MT-18C	MT-18F	MT-185
ASTM B777; AMS-T-21014 Class	Class 1	Class 1	Class 2	Class 3	Class 3	Class 4
Material	90% W	90% W	92.5% W	95% W	95% W	97% W
	6% Ni	7% Ni	5.25% Ni	3.5% Ni	3.5% Ni	2.1% Ni
	4% Cu	3% Fe	2.25% Fe	1.5% Cu	1.5% Fe	0.9% Fe
Density, grams/cubic centimeter	17 gm/cc	17 gm/cc	17.5 gm/cc	18 gm/cc	18 gm/cc	18.5 gm/cc
Density; lbs/in ³	0.614	0.614	0.632	0.65	0.65	0.668
Mil. Spec. T-21014 D	Class 1	Class 1	Class 2	Class 3	Class 3	Class 4
ASTM-B777	Grade 1	Grade 1	Grade 2	Grade 3	Grade 3	Grade 4
Type	Type II & III	Type II & III	Type II & III	Type II & III	Type II & III	Type II & III
AMS 7725C	Type 1	Type 2				
Hardness; Rockwell C	24 (32 max)	25 (32 max)	26 (33 max)	27 (34 max)	27 (34 max)	28 (35 max)
Ultimate Tensile Strength; PSI, min.	94,000	110,000	110,000	94,000	105,000	100,000
Yield Strength, .2% Offset; PSI, min.	75,000	75,000	75,000	75,000	75,000	75,000
Elongation, % in 1"	>2	>5	>5	>2	>3	>2
Proportional Elastic Limit; PSI	45,000	52,000	46,000	45,000	44,000	45,000
Modulus of Elasticity; PSI	40 x 10 ⁶	45 x 10 ⁶	47 x 10 ⁶	45 x 10 ⁶	50 x 10 ⁶	53 x 10 ⁶
Coefficient of Thermal Expansion x 10E-6/°C (20°- 400°C)	5.4	4.8	4.6	4.4	4.6	4.5
Thermal Conductivity; cal/s*cm*K	0.23	0.18	0.2	0.33	0.26	0.3
Electrical Conductivity; %IACS	14	10	13	16	13	17
Magnetic Properties	NIL	Slightly Magnetic	Slightly Magnetic	NIL	Slightly Magnetic	Slightly Magnetic

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