



Advanced Material & Metal Compounds

□ Tungsten-based High Density Alloy

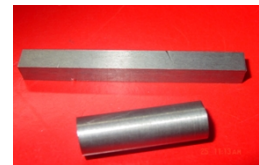
Tungsten-based High Density Alloy, W-Ni-Fe and W-Ni-Cu, also called Tungsten Heavy Alloy, grey appearance, is based on tungsten alloyed with appropriate Fe, Ni, Cu, Mo, Co, with excellent radiation resistance, electric and thermal conductivities, good mechanical strength, corrosion resistance with high density (16.4 -18.5g/cm³), and small coefficient of expansion, higher elastic modulus. W-Ni-Fe and W-Ni-Cu alloy are two kinds of commonly heavy metals, difference sizes are available in rod, ball, ring block strip and non-standard, abnormal pieces which conform to ASTM-777-87 and AMS-T-21014. These are extensively used in instrumentations, medical shields, military equipment, nuclear, mechanical manufacturing, oil industry, aircraft components, and sports equipment.



No.	Item		Standard Specification				
1	Type	Shape	Size mm	Density	HRC	Elongation	T S Mpa
2	W-Ni-Fe	Bar	D(2-320)xL(2-600)	15.8-18.2	20-35	8-33%	600~980
		Tube	I.D≥5 O.D≤70	17.5-18.2	20-35	8-33%	600~980
		Circle	I.D15.5xO.D27.0xT2.2	≥18.0	20-35	8-33%	600~980
		Plate	10-600x10-300x2-200	17.5-18.7	20-35	8-33%	600~980
		Abnormal	<500kgs	17.5-18.7	20-35	8-33%	600~980
3	W-Ni-Cu	Bar	D(2-320)xL(2-600)	16.5-18.1	20-35	2-15%	550~750
		Tube	I.D≥5 x O.D≤70	17.5-18.1	20-35	2-15%	550~750
		Circle	I.D15.5xO.D27.0xT2.2	≥18.0	20-35	2-15%	550~750
		Plate	10-600x10-300x 2-200	16.9-18.1	20-35	2-15%	550~750
		Abnormal	<500kgs	16.9-18.1	20-35	2-15%	550~750
4	Packing	In plywood case or iron drum					

□ Tungsten Copper Alloy

Tungsten Copper Alloy, a kind of hard material by tungsten alloyed with percentage of copper with CIP formation sintered tungsten skeleton and infiltrating copper technology. As high performance materials, Tungsten-Copper is characterized by high thermal conductivity, low thermal expansion and high wear resistance combined with excellent electrical conductivity, and its high-intensity, and ability to be easily machined. It is widely used for electric power, electron, metallurgy, space flight and aviation as high voltage arc contactor, vacuum contactors, and electrode for resistant welding and spark erosion, sealed cap for transistors sealing welder, refractory parts, heat sinks and parts of rocket.



No.	Item		Standard Specification				
1	W-Cu		Cu %	Density (g/cm ³)	Resistance max Ω/cm	IACS (%) min	Hardness min (HB)
2	Grade	W50Cu	50+/-1	11.85	3.2	54	1128
		W55Cu	45+/-1	12.30	3.5	49	1226
		W60Cu	40+/-1	12.75	3.7	47	1373
		W65Cu	35+/-1	13.30	3.9	44	1520
		W70Cu	30+/-1	13.80	4.1	42	1716
		W75Cu	25+/-1	14.50	4.5	38	1912
		W80Cu	20+/-1	15.10	5.0	34	2158
		W85Cu	15+/-1	15.90	5.7	30	2354
3	Packing	W90Cu	10+/-1	16.75	6.5	27	2550
		In plywood case or iron drum					