

TUNGSTEN PRODUCT SPECIFICATIONS

Properties of Tungsten Alloys													
Type	90-7-3	91-6-3		92-5-3		93-4-3		95-3-2		96-3-1		97-2-1	
Alloy Composition	6%Ni-3%Fe	6%Ni-3%Fe		5%Ni-3%Fe		4%Ni - 3%Fe		3%Ni - 2%Fe		3%Ni - 1%Fe		2%Ni - 1%Fe	
Density – g/cm ³	17.1 ±0.15	17.25±0.15		17.50±0.15		17.60±0.15		18.10±0.15		18.30±0.15		18.50±0.15	
Heat Treatment	Sint.	Sint.	Swag	Sint.	Swag	Sint.	Swag	Sint.	Swag	Sint.	Swag	Sint.	Swag
Tensile Strength MPa	900-1000	900-1000	1150-1250	900-1100	1150-1250	900-1100	1150-1250	920-1100	1150-1300	920-1100	1150-1300	920-1100	1200-1300
Elongation - %	18-29	17-27	8 - 18	16-26	8 - 18	16-24	7 - 18	10-22	6 - 12	8-20	3 - 8	6-13	2 – 7
Hardness - HRC	24-28	25-29	25-33	25-29	35-45	26-30	35-45	27-32	37-47	28-34	37-47	28-36	37- 47
Impact Toughness J/Cm ²	120	110	30	100	30	90	30	45	10	27	10	14	7
Yield Strength MPa	-	-	900-1100	-	900-1100	-	900-1100	-	850-1050	-	800-1050	-	750-1050
AMS-T-21014 Class	Class 1	Class 1		Class 2		Class 2		Class 3		Class 3		Class 4	
Notes: Sint. = Sintering only Swag = Metal is swaged after sintering													

Analysis of Pure Tungsten Sheet and Bar Stock																
W Min	Impurities – max %															
	Pb	Bi	Sn	Sb	As	Fe	Ni	Cu	Al	Si	Ca	Mg	Mo	P	C	K
99.95%	.0001	.0001	.0001	.001	.002	.005	.003	.001	.001	.003	.002	.002	.008	.001	.005	.002

Tungsten Copper Materials				
Type	WCu10	WCu20	WCu25	WCu30
Density – g/cm ³	16.8 – 17.2	15.2-15.6	14.5-15.0	13.8-14.4
HB (Mpa)	≥2550	≥2160	≥1940	≥1720
Electrical Conductivity (% IACS)	> 27	> 34	> 38	> 42
Forms: Rods, Bars, Sheets, Plates, and Finished Parts				



Copper Tungsten Components



Pure Tungsten Shapes



Fabricated Pure and Alloy Parts