

Tungsten Heavy Metal Alloy Material Data Sheet



Rembar	WHMA 17	WHMA 17Fe	WHMA 17D	WHMA 17.5	WHMA 17.7	WHMA 18	WHMA 18Fe	WHMA 18.5
Element Properties	W 90% Ni 6% Cu 4%	W 90% Ni 6% Cu 2% Fe 2%	W 90% Ni 7% Fe 3%	W 92.5% Ni 5.25% Fe 2.25%	W 93% (Balance) Ni,Fe,Mo	W 95% Ni 3.5% Cu 1.5%	W 95% Ni 3.5% Fe 1.5%	W 97% Ni 2.1% Fe .9%
ASTM-B-777	Class 1	Class 1	Class 1	Class 2	N/A	Class 3	Class 3	Class 4
Density Gms/cc	17	17	17	17.5	17.7	18	18	18.5
Density Lbs/cu. In.	.614	.614	.614	.632	.639	.650	.650	.668
Hardness Rockwell C	24	24	25	26	30	27	27	28
Ultimate Tensile Strength (PSI)	110K	110K	125K	114K	130K	115K	125K	128K
Yield strength .2% offset (PSI)	90K	90K	88K	90K	90K	85K	90K	85K
Elongation (% in 1")	8	8	14	12	10	7	12	10
Proportional Elastic Limit (PSI)	45K	45K	52K	46K	60K	45K	44K	45K
Modules of Elasticity (PSI)	40 x 10 ⁶	40 x 10 ⁶	45 x 10 ⁶	47 x 10 ⁶	53 x 10 ⁶	45 x 10 ⁶	50 x 10 ⁶	53 x 10 ⁶
Coefficient of Thermal Expansion X 10 ⁻⁶ /°C	5.4	5.4	4.8	4.6	4.5	4.4	4.6	4.5
Thermal Conductivity (CGS Units)	.23	.23	.18	.20	.27	.33	.26	.30
Electrical Conductivity (% IACS)	14	14	10	13	14	16	13	17
Magnetic Properties	None	Slightly Magnetic	Slightly Magnetic	Slightly Magnetic	Slightly Magnetic	None	Slightly Magnetic	Slightly Magnetic

RoHS (Restriction of Hazardous Substances)

In 2006, the European Union Directive restricts the use of six hazardous materials in the manufacture of various types of electronic and electrical equipment.

Lead
Mercury
Cadmium
Hexavalent Chromium
PPB (Polybrominated Biphenyls)
PBDE (Polybrominated Diphenyl Ether)