



TUNGSTEN HIGH-DENSITY METALS: SOLUTIONS FOR **WEIGHTS AND COUNTERBALANCES**

CMW® TUNGSTEN-BASED HIGH-DENSITY METALS

have long been specified for control surface counterbalances in military and commercial aircraft. Large mass in a small space is required to balance and stabilize control surfaces operating at high speeds. A savings in total aircraft weight can result from the use of these materials because the small high density piece requires less surrounding material to enclose it. In addition, the high strength of the material permits the part to be located for the most efficient weight effect and therefore uses the minimum amount of material.

CMW Inc. enjoys a long history of supplying tungsten high-density metals used as weights and counterbalances for the aerospace, military and defense industries. Whether you desire to balance helicopter rotor blades, stabilize control surfaces of ailerons or rudder sections, or position the forecone of a missile, CMW tungsten-based, high-density metals make an excellent choice for your demanding applications.

CMW manufactures and supplies material in a variety of forms such as as-sintered, near net-shape, or precision-machined to your exact specifications.

These materials meet the MIL-T-21014, AMS7725D, ASTM B777 specifications for Class 1, Class 2, Class 3 and Class 4 tungsten. All of our materials meet your domestic material requirements.

If you are looking for a better solution for your weights and counterbalance needs, please contact us to discuss the properties, manufacturability and availability of our high-density metals.



Precision Machined Weights and Counterbalances



Raw Material in Bar Stock and Near-net Shape

HIGH DENSITY METALS

The nominal tungsten content of our high-density materials ranges from 90% to 97% with densities from 17.0 g/cm³ to 18.5 g/cm³ respectively. The balance is comprised of nickel and copper or nickel and iron.

TYPICAL PROPERTIES OF CMW® HIGH-DENSITY METALS

HIGH-DENSITY METAL	COMPOSITION % BY WEIGHT	DENSITY g/cm ³ or lb/in ³		HARDNES ROCKWELL	SPECIFICATIONS
CMW® 1000 Tungsten, Nickel, Copper	90W; 6Ni; 4Cu	17	0.614	24 HRC	AMS 7725D Ty 1 AMS-T-21014 Cl 1 MIL-T-21014D Cl 1 ASTM B777 Cl 1
CMW® 3000 Tungsten, Nickel, Iron	90W; 7Ni; 3Fe	17	0.614	25 HRC	AMS 7725D Ty 2 AMS-T-21014 Cl 1 MIL-T-21014D Cl 1 ASTM B777 Cl 1
CMW® 2925 Tungsten, Nickel, Copper	92.5W; 4.5Ni; 3Cu	17.5	0.632	25 HRC	AMS-T-21014 Cl 2 MIL-T-21014D Cl 2 ASTM B777 Cl 2
CMW® 3925 Tungsten, Nickel, Iron	92.5W; 5.25Ni; 2.25Fe	17.5	0.632	26 HRC	AMS-T-21014 Cl 2 MIL-T-21014D Cl 2 ASTM B777 Cl 2
CMW® 2000 Tungsten, Nickel, Copper	95W; 3.5Ni; 1.5Cu	18	0.65	27 HRC	AMS-T-21014 Cl 3 MIL-T-21014D Cl 3 ASTM B777 Cl 3
CMW® 3950 Tungsten, Nickel, Iron	95W; 3.5Ni; 1.5Fe	18	0.65	28 HRC	AMS-T-21014 Cl 3 MIL-T-21014D Cl 3 ASTM B777 Cl 3
CMW® 3970 Tungsten, Nickel, Iron	97W; 2.1Ni; 0.9Fe	18.5	0.668	30 HRC	AMS-T-21014 Cl 4 MIL-T-21014D Cl 4 ASTM B777 Cl 4

About the Company » With its roots to 1916 as the Mallory Metallurgical Company, CMW operates in three primary business units dedicated to silver-based electrical contacts, tungsten-based high density metals and copper-based resistance welding consumables. Numerous organizations have repeatedly recognized our company and its associates for safety, quality and continuous improvement programs. With an employment base including over 1,000 years experience in chemistry, metallurgy, manufacturing engineering and other industrial technologies, CMW operates a range of capabilities across the spectrum of manufacturing in its 6+ acre complex in the center of the United States.

We stand ready to assist you!

CMW is ISO 9001:2000 certified.

For more information, please call our office or visit our website at www.cmw.com.

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