TUNGSTEN HIGH-DENSITY METALS: SOLUTIONS FOR

RADIATION SHIELDING

WITH A DENSITY IN THE RANGE of 17g/cm^3 to 18.5g/cm^3, tungsten alloy shielding takes up roughly two-thirds as much space as lead shielding and poses no environmental threat.

CMW Inc. enjoys a long history of supplying tungsten high-density metals used in radiation shielding for the medical, industrial and nuclear industries. Whether shielding radioactive material used in nuclear medicine, radiation therapy, or gamma-ray inspection units, CMW tungsten high-density metals make an excellent choice for your demanding application.

Our tungsten high-density metals provide the properties required in radiation shielding for therapy as well as diagnosis. Common applications include collimators, syringe and vial shields, and radioactive source containers.

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

These revolutionary high-density metals possess better shielding capability than materials such as lead but without the health and environmental concerns. Also, special licensing is not required thus reducing your administration cost and time.

Precision machined components used in radiation shielding.

Raw material and machined components used in radiation safety.

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

USING CMW MATERIALS FOR YOUR RADIATION SHIELDING SOLUTIONS WILL PROVIDE:

- Thinner sections versus other materials
- Non-toxic, environmentally friendly
- Structurally stronger
- Machines easily *(similar to gray cast iron)*
- Stable at 1000° C
- Does not require licensing
- Good thermal conductivity
- Low coefficient of thermal expansion

CMW Inc. || P.O. Box 2266 || Indianapolis, Indiana 46206-2266 USA
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CMW high-density materials effectively absorb gamma radiation and X-rays. From a CMW high-density metals family of tungsten-based materials, CMW materials have densities 50% greater than lead. The high-density, good mechanical strength and excellent machinability of CMW materials make them ideal for shielding applications.

The nominal tungsten content of our high-density materials ranges from 90% to 97% with densities from 17.0 g/cm^3 to 18.5 g/cm^3 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 7725C 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 7725C 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 the Metals team or visit our website at www.cmw.com.

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