

# Tungsten Heavy Alloy

## Technical Information Bulletin

Powders That Shape Your World



Global Tungsten & Powders Corp. has over 70 years of experience in advanced powder metallurgy. Over this time GTP has developed a number of materials for use in the defense and aerospace industry, such as tungsten alloy kinetic energy penetrators and rocket nozzles. Below are the specifications for our standard product offerings. GTP has developed products that reduce or eliminate the environmental concerns of lead, cobalt and depleted uranium. GTP is a vertically integrated manufacturer with the capability to process both tungsten ore and recycle scrap (secondary raw material). We source our raw material from all over the world, excluding China and conflict regions, providing you with a critical security of supply.

### Typical Tungsten Heavy Alloy Rod Properties

Size	UTS (ksi)		Yield Strength (ksi)		Elongation (%)		Impact (ft-lb/cm <sup>2</sup> )		Density (g/cc)	
	Min	Mean	Min	Mean	Min	Mean	Min	Mean	Min	Mean
Medium Caliber	195	212	180	203	4.0	8.0	20	30	17.50	17.74
Large Caliber	189	208	175	200	5.0	9.5	22	75	17.55	17.7

- The above table represents typical characteristics of standard GTP materials. GTP can tailor material properties through alloy composition and processing to meet the needs of your application.

### Heavy Alloy Spheres and Cubes

GTP has the manufacturing capability to produce tungsten heavy alloy parts in various shapes and size, including spheres and cubes.

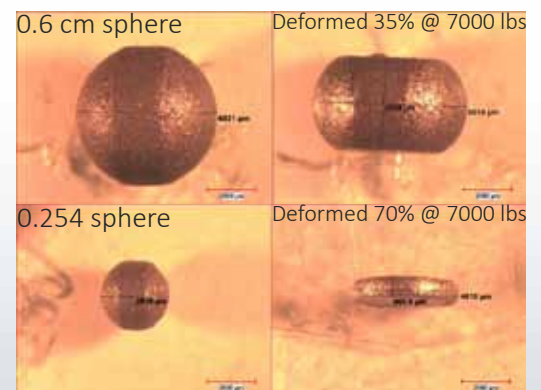
GTP can produce spheres up to 0.635" (16.1mm) on our high speed equipment. Additionally, we have the manufacturing capability to produce spheres as large as a bowling ball if you process calls for it.

GTP can produce cubes up to 0.5" (12.7mm) on our high speed equipment. We can manufacture cubes as large as 11" (28 cm).

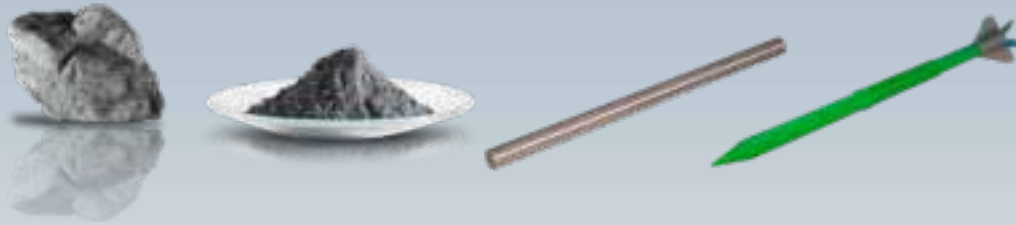
GTP spheres and cubes exhibit the following important properties:

- High Density
- High Ductility
- High Crush Strength
- High Dimensional Tolerances

GTP produces spheres and cubes to ASTM specifications B777, Class 1-4.



### GTP Supply Chain:



GTP controls its supply chain from ore to finished product.

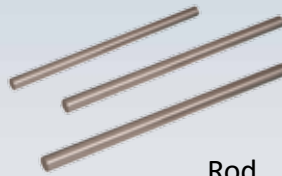
### GTP Manufactures:



Spheres



Penetrators



Rod



Cubes

### Can be used in:



### Certification

Lot data for the above physical and chemical specifications is reported in a laboratory test that is provided for each shipment. Information is available for customer evaluation.

### History of Global Tungsten & Powders:

GTP was founded in 1916 as the Patterson Screen Company. In 1943 GTP began working with the government producing tungsten metal powders for armor piercing shells and proximity fuses made from internally produced tungsten wire. Since then, GTP has remained a valued supplier to the government and the defense industry through the manufacture and development of tungsten alloys and parts. GTP scientists have pioneered many advances still used in the production of today's tungsten and molybdenum alloys.



Global Tungsten & Powders  
1 Hawes Street  
Towanda, PA 18848  
USA  
Phone: +1 (570) 268-5000  
Fax: +1 (570) 268-5323