

TUNGSTEN CARBIDE STAINLESS STEEL BALLS

We manufacture balls ranging from .3mm to 2 1/2" diameter in various material grades, including C-1, C-2, Pen and grades 3-100. Nickel and other special grades are quoted upon request.

C-1

With better shock resistance than C-2, this grade is typically used as a mining grade where toughness and abrasion resistance are also important. It has also proven useful in bearing applications.

C-2

Higher wear resistance and toughness make this an excellent general purpose grade for use in pumps and valves.

Pen and grade 3-100

For further information regarding Pen and grades 3-100, please see our Penball spec sheet under Metals.

Material Analysis:		
Property/Material	C-1	C-2
Chemistry (wt%)	94% Wc 6% Co	94% Wc 6% Co
Hardness	91.5 Ra	92 Ra
Density (gm/cc)	14.95	14.95
Transverse Rupture Strength (psi)	290,000	210,000
Ultimate Compressive Strength (psi)	750,000	790,000
Ultimate Tensile Strength (psi)	220,000	210,000
Modulus of Elasticity (psi)	93 x 10 ⁶	94 x 10 ⁶
Ductility (% Elongation)	210,000	280,000
Proportional Limit (psi)	0.2%	0.2%
Impact Strength	12 in-lb	12 in-lb
Abrasion Resistance	15	35

Available Grades and Sizes:	
Grade	Size Range (inches)
10	1/8" - 1"
16	1/8" - 1"
24	1/8" - 1 1/2"
48	1/8" - 2 1/2"
100	1/8" - 2 1/2"
200	1/8" - 2 1/2"

Other Materials:

A sampling of special material compositions offered is listed below:

- Cobalt-based Alloys
- Hastelloy®
- Nickel Carbides
- Stellite®
- Various Stainless