



Metallics

Pure Molybdenum and Tungsten

- We furnish round bars, flat plates, and also discs (insets) cut and tinned to your specs.

Heavy Metal

- Machinable high density tungsten alloy can be quoted upon request.



Ohio Carbon Blank, Inc.

GRAPHITE AND EDM ACCESSORIES

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Metallics

Material Grades, Nominal Properties, and General Application Guide

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S1WC	Copper Tungsten	56 44	10	12.60	55-60	72-82 R _B
S3WC	Copper Tungsten	68 32	10	13.93	48-53	85-92 R _B

Flash and butt welding die inserts. Spot welding ferrous metals, stainless steel where the electrode should have higher thermal and electrical conductivity than Class 11 material.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S5WC	Copper Tungsten	70 30	10	14.18	47-52	72-82 R _B
S3WC	Copper Tungsten	68 32	-	11.27	48-53	85-92 R _B

Light duty projection welding dies where welding pressures are not extreme.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S10WC	Copper Tungsten	75 25	11	14.80	42-50	96-99 R _B

Standard for electrode and die inserts on most flash and butt welding dies. For projection welding dies where welding pressures are moderate, also used for light electrical upsetting, electro forming dies, and seam welder bushing inserts.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S30WC	Copper Tungsten	80 20	14	15.60	41-49	99-104 R _B
S10TC	Tungsten Carbides Copper	56 44	-	11.64	38-44	98-108 R _B
S40WC	Copper Tungsten	85 15	-	16.20	18-24	105-115 R _B

For volume production projection welding dies where pressures are relatively high, electrical upsetting of nonferrous metals and low carbon steel when used as die facings. Cross wire welding of wire and rod.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S10WA	Copper Tungsten Alloy*	75 25	*	14.80	25-30	104-110 R _B

* Heat treatable copper alloy. These grades furnished fully heat treated.

Supplied in the fully heat treated condition. Used for electroforming and electrical upsetting where temperatures and pressures are high.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S50WS	Silver Tungsten	50 50	-	13.48	62-70	62-70 R _B
S35WS	Silver Tungsten	65 35	-	14.77	50-56	80-87 R _B

For special welding applications where a corrosion resistant electrode is needed.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S20WC	Silver Tungsten	78 22	EDM ECM	15.56	48-53	90-100 R _B
S15WC	Copper Tungsten	68 32	EDM ECM	14.25	44-52	90-96 R _B

For use in EDM (Electrical Discharge Machining) and ECM (Electro Chemical Rg Machining) applications.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S100W	Tungsten	100	13	19.28	31	69 R _A

Pure Tungsten is very hard with low ductility. Principally used to weld nonferrous materials since it will not alloy with them.

GRADE	DESCRIPTION	PERCENTAGE	RWMA CLASS	DENSITY (g)	ELEC. COND. %IACS	HARDNESS
S100M	Molybdenum	100	14	10.20	30	89 R _A

Molybdenum is not as hard as tungsten, and can be machined. It has the same application as tungsten.

For pricing, call toll free: **800-448-8887**
or email: **info@ohiocarbonblank.com**