

## Tungsten Composites Typical Properties\*

Mi-Tech	Nominal Composition % Weight	Rockwell Hardness	Electrical Conductivity % IACS	Ultimate Tensile Strength PSI	Cross Breaking Strength PSI	Density g/cc	Typical Resistance Welding Applications
<b>CW55</b>	55% Tungsten 45% Copper	79 B	55	63,000	110,000	12.50	Flash and butt welding die inserts requiring high electrical and thermal conductivity. Electrode facings for the welding of stainless steel.
<b>CW68</b>	68% Tungsten 32% Copper	88 B	52	75,000	130,000	13.93	Flash and butt welding die inserts requiring high electrical and thermal conductivity. Electrode facings for the welding of stainless steel.
<b>CW70E</b>	68% Tungsten 32% Copper	88 B	52	75,000	130,000	13.93	Flash and butt welding die inserts requiring high electrical and thermal conductivity. Electrode facings for the welding of stainless steel.
<b>CW70</b>	70% Tungsten 30% Copper	90 B	50	85,000	140,000	14.18	Light duty projection welding dies where weld pressures are medium to light.
<b>CW75</b>	75% Tungsten 25% Copper	94 B	48	90,000	150,000	14.70	Used for facing and inserts for flash and butt welding dies, projection welding electrodes, seam welding bearing inserts, facings for electro-forming and electro-forging dies. Often used for EDM electrodes for greater wear ratios.
<b>CW78</b>	78% Tungsten 22% Copper	96 B	46	94,000	160,000	15.12	Used where a slightly harder material is required for the same applications as CW75.
<b>CW80</b>	80% Tungsten 20% Copper	98 B	44	96,000	170,000	15.56	Heavy duty projection welding electrodes, die facing for electro-forming and electro-forging, also facings for upsetting of rivets & studs.
<b>SW50</b>	50% Tungsten 50% Silver	70 B	65			13.4	Used for arcing contacts and plates, arc runners, and current carrying members
<b>SW65</b>	65% Tungsten 35% Silver	87 B	53			14.5	Used for arcing contacts and plates, arc runners, and current carrying members
<b>SW74</b>	74% Tungsten 26% Silver	90 B	47			15.5	Used for arcing contacts and plates, arc runners, and current carrying members
<b>TC50</b>	50% Tungsten-Carbide 50% Copper	94 B	47	70,000	140,000	11.27	Light duty projection welding dies where pressures are not extreme but where abrasion may be encountered.
<b>TC56</b>	56% Tungsten-Carbide 44% Copper	99 B	42	75,000	160,000	11.67	Where abrasion is encountered for heavy duty projection welding electrode and die facings for electro-forming and electro-forging.
<b>TC70</b>	70% Tungsten-Carbide 30% Copper	37 C	30	85,000	180,000	12.60	An extremely hard material highly resistant to wear, for electro-forging and upsetting. Impractical to machine and should be ground.

\* Properties may vary according to size and shape of part.

Composition shown is typical and may change for manufacturing purposes or to meet physical and/or application requirements.