



## TUNGSTEN ELECTRODES

All tungsten electrodes are packaged 10 pieces per box.



### Pure Tungsten

- WM417040 .040" x 7" Ground
- WM417116 1/16" x 7" Ground
- WM417332 3/32" x 7" Ground
- WM41718 1/8" x 7" Ground
- WM417532 5/32" x 7" Ground

### 2% Thoriated Tungsten

- WM437040 .040" x 7" Ground
- WM437116 1/16" x 7" Ground
- WM437332 3/32" x 7" Ground
- WM43718 1/8" x 7" Ground
- WM437532 5/32" x 7" Ground

### 1.5% Lanthanated Tungsten

- WM457040 .040" x 7" Ground
- WM457116 1/16" x 7" Ground
- WM457332 3/32" x 7" Ground
- WM45718 1/8" x 7" Ground
- WM457532 5/32" x 7" Ground

### 2% Ceriated Tungsten

- WM477040 .040" x 7" Ground
- WM477116 1/16" x 7" Ground
- WM47718 1/8" x 7" Ground
- WM477332 3/32" x 7" Ground
- WM477532 5/32" x 7" Ground

#### Characteristics

Pure Tungsten (EWP)

Color code:Green

These electrodes are primary used with alternating current (AC) for welding of aluminum and magnesium alloys. With this type of current, the tip of the EWP electrode forms a clean, balled end, which provides good arc stability. Pure tungsten is the least expensive, but it is more prone to contamination of the weld than the other types of tungsten electrodes.

Thoriated Tungsten (EWTh-2)

Color code:2% Red

Thoriated tungsten electrodes were designed for direct current electrode negative (DCEN) or straight polarity applications. They maintain a sharpened tip configuration during welding which is desirable for the welding of steels, nickel alloys and most alloys other than aluminum and magnesium. Thoriated tungsten electrodes are not normally used with AC welding because it is difficult to maintain the balled end (which is necessary with AC welding) without splitting the electrode.

Lanthanated EWLa-1.5)

Color code:Gold

These electrodes can be used as a nonradioactive substitute for 2% thoriated tungsten. They will provide very similar performance with minimum amount of adjustment or operating conditions required. These materials are certified to be free of radioactivity.

#### WMT1592C

Tungsten  
1/16" x 7" 2%  
Thoriated (3)  
Carded



#### WMT1593C

Tungsten  
3/32" x 7" 2% Thoriated (3) Carded

#### WMT1594C

Tungsten 1/8" x 7" 2% Thoriated (3) Carded

#### WMT1582C

Tungsten 1/16" x 7" Pure (3) Carded

#### WMT1583C

Tungsten 3/32" x 7" Pure (3) Carded

#### WMT1584C

Tungsten 1/8" x 7" Pure (3) Carded

#### Other Tungstens Available

Zirconiated Tungsten (EWZr-1)

Color code:Brown

These electrodes have characteristics that fall between pure and thoriated electrodes. They are normally the electrode of choice for AC welding of aluminum and magnesium alloys because they combine the desirable arc stability characteristics and balled end typical of pure tungsten along with the higher current capacity and better arc starting characteristics of thoriated tungsten electrodes.

Ceriated Tungsten (EWCe-2)

Color code:Orange

These electrodes are characterized by ease of starting, good arc stability, long life, high current capacity and lack of radioactivity. Ceriated electrodes will operate successfully with AC or DC.

#### AWS Classification

**Weldmark® tungsten electrodes are manufactured to the high level of quality defined by the American Welding Society. ANSI/AWS Specifications (A5.12)**

AWS Class	Color Code	Min. Wt.% Tungsten	Type	Wt.%	Wt.% other Elements
EWP	Green	99.5	(pureW)	—	0.5
EWTh-1	Yellow	98.3	thoria	0.8-1.2	0.5
EWTh-2	Red	97.3	thoria	1.7-2.2	0.5
EWXr-1	Brown	99.1	zirconia	0.15-0.4	0.5
EWCe-2	Orange	97.3	ceria	1.8-2.2	0.5
EWLa-1.5	Gold	97.8	lanthana	1.3-1.7	0.5

#### Standard Sizes and Lengths

Nominal Size	Standard Sizes, inches		*Standard Length, inches
	Nominal Size	Tolerance on Actual Size, Inches	
0.010	0.010	0.001	7
0.020	0.020	0.002	7
0.040	0.040	0.003	7
1/16	0.062	0.003	7
3/32	0.093	0.003	7
1/8	0.125	0.003	7
5/32	0.156	0.003	7
3/16	0.187	0.003	7
1/4	0.250	0.003	7

#### ANSI AWS A5.12 Classification System

Tungsten electrodes are classified on the basis of their chemical compositions.

E: stands for an electrode

W: stands for the chemical symbol for tungsten

The final lettering indicates the alloying element or oxide additions.

P: Pure

Zr: Zirconiated

Th: Thoriated

Ce: Ceriated

La: Lanthanated

The numbers specify the nominal alloying composition (in weight - percent). For instance, EWTh-2 is a thoriated tungsten electrode that contains nominally 2 wt - % thoria.