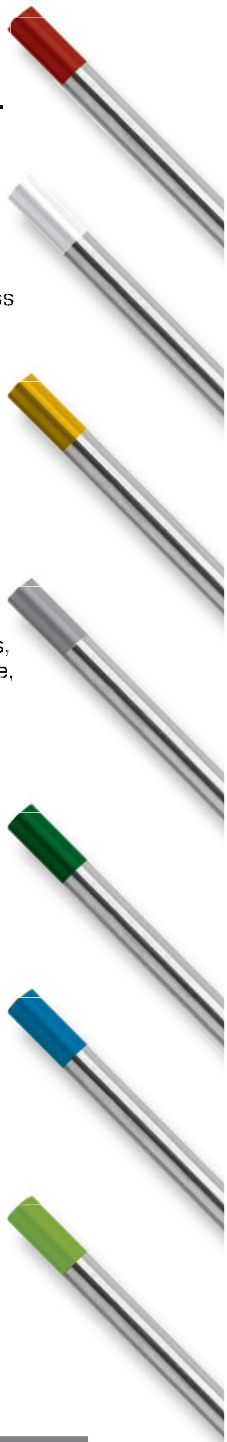
TUNGSTEN ELECTRODES



2% THORIATED (RED) EWTh-2/WT20

Principal Oxide: 1.7–2.2% Thorium Oxide

Radioactive. Best for use in Direct Current (D/C) applications using transformer based constant current power sources. Best for use on non corroding steels, titanium alloys, nickel alloys, copper alloys. Good D/C arc starts and stability, medium erosion rate, medium amperage range, medium tendency to spit.

0.8% ZIRCONIATED (WHITE) EWZr-8/WZ8

Principal Oxide: 0.7–0.9% Zirconium Oxide

Non-Radioactive. Best for use in Alternating Current (A/C) for aluminum alloys and magnesium alloys using inverter or transformer based constant current power sources. Balls well, handles higher amperage than pure tungsten with less pitting, better arc starts and arc stability than pure tungsten.

1.5% LANTHANATED (GOLD) EWLa-1.5/WL15

Principal Oxide: 1.3–1.7% Lanthanum Oxide

Non-Radioactive. Best for use in Direct Current (D/C) as an alternative to 2% Thoriated using inverter or transformer based constant current power sources. Best for non corroding steels, titanium alloys, nickel alloys, copper alloys. Best D/C arc starts and stability, low erosion rate, wide amperage range, no spitting.

2% CERIATED (GRAY) *FORMERLY ORANGE* EWCe-2/WC20

Principal Oxide: 1.8–2.2% Cerium Oxide

Non-Radioactive. Best for use in Alternating Current (A/C) or Direct Current (D/C) applications using inverter or transformer based constant current power sources. Good for low-alloyed steels, non corroding steels, aluminum alloys, magnesium alloys, titanium alloys, nickel alloys, copper alloys. Good ignition and re-ignition properties, long service life, excellent arc stability. Low erosion rate, best at low amperage range, no spitting, good D/C arc starts and stability.

PURE (GREEN) EWP/WP

Principal Oxide: None

NON-RADIOACTIVE. Good for use in Alternating Current (A/C) for aluminum alloys and magnesium alloys in low to medium amperage applications using transformer based constant current power sources only. Balls easy, tends to spit at higher amperages. Used for non-critical welds only.

2% LANTHANATED (BLUE) EWLa-2/WL20

Principal Oxide: 1.8–2.2% Lanthanum Oxide

Non-Radioactive. Best general purpose electrode for both Alternating Current (A/C) or Direct Current (D/C) using inverter or transformer based constant current power sources. Good for low-alloyed steels, non corroding steels, aluminum alloys, magnesium alloys, titanium alloys, nickel alloys, copper alloys. Good arc starts and stability, medium to high amperage range, low erosion rate.

LaYZr™ (CHARTREUSE) EWG

Principal Oxides: 1.5% Lanthanum, 0.8% Yttrium Oxides, 0.8% Zirconium

Non-Radioactive. Best for automated or robotic applications in Alternating Current (A/C) or Direct Current (D/C) due to low voltage tolerance (changes in tip to work piece distance) using inverter or transformer based constant current power sources. Good for low-alloyed steels, non corroding steels, aluminum alloys, magnesium alloys, titanium alloys, nickel alloys, copper alloys. Very stable tip geometry, runs cooler than 2% Thoriated with longer life, low to medium amperage range. Very best low amperage starts.

Color Code and Alloying Elements for Various Tungsten Electrode Alloys

Designation		Chemical Composition Impurities ≤0.1%		TIP COLOR	
ISO 6848	AWS A5.12	OXIDE ADDITIVE	TUNGSTEN		
WT20	EWTh-2	ThO_2: 1.70–2.20%	≥97.30%	Red	
WP	EWP	~~~~~~	≥99.95%	Green	
WL15	EWLa-1.5	LaO_2: 1.30–1.70%	≥97.80%	Gold	
WC20	EWCe-2	CeO_2: 1.80–2.20%	≥97.30%	Gray	
WL20	EWLa-2	La_2O_3: 1.80–2.20%	≥97.30%	Blue	
WZ8	EWZr-8	ZrO_2: 0.70–0.90%	≥98.60%	White	
LaYZr	EWG	La_2O_3: 1.3–1.7%; ZrO_2: 0.06–0.10%; Y_2O_3: 0.6–1.0%	≥98.34%	Chartreuse	

TUNGSTEN RETAIL PACKS

Oxides used are primarily zirconium, thorium, lanthanum or cerium. Additions are usually 1% – 4%. These oxides greatly improve arc initiation, especially when direct current (DC) welding is employed. Thorium oxide (thoria) has been used for many years, having been found effective in terms of long life and thermal efficiency. Zirconium oxide (zirconia) has been commonly used for alternating (AC) TIG welding, normally for welding aluminum.

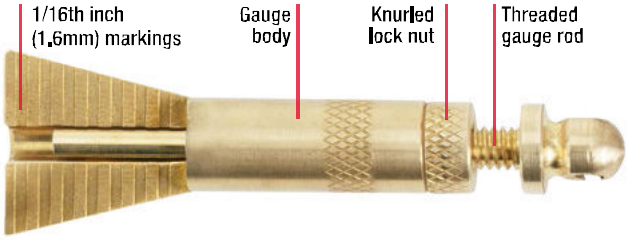
ISO 6848 COLOR CHART	SIZE		PART #	
	INCHES	MILLIMETERS	10 PIECE	3 PIECE P.O.P.
2% Thoriated	.020 x 7"	0.5 x 175mm	T0207GT2	
	.040 x 7"	1.0 x 175mm	T0407GT2	
Red	1/16 x 7"	1.6 x 175mm	T1167GT2	T1167GT2-3
AWS A5.12 EWTh-2	3/32 x 7"	2.4 x 175mm	T3327GT2	T3327GT2-3
ISO 6848 WT20	1/8 x 7"	3.2 x 175mm	T187GT2	T187GT2-3
	5/32 x 7"	4.0 x 175mm	T5327GT2	
.8% Zirconiated	.020 x 7"	0.5 x 175mm	T0207GZ	
	.040 x 7"	1.0 x 175mm	T0407GZ	
White	1/16 x 7"	1.6 x 175mm	T1167GZ	T1167GZ-3
AWS A5.12 EWZr-8	3/32 x 7"	2.4 x 175mm	T3327GZ	T3327GZ-3
ISO 6848 WZ8	1/8 x 7"	3.2 x 175mm	T187GZ	T187GZ-3
	5/32 x 7"	4.0 x 175mm	T5327GZ	
1.5% Lanthanated	.020 x 7"	0.5 x 175mm	T0207GL	
	.040 x 7"	1.0 x 175mm	T0407GL	
Gold	1/16 x 7"	1.6 x 175mm	T1167GL	T1167GL-3
AWS A5.12 EWLa-1.5	3/32 x 7"	2.4 x 175mm	T3327GL	T3327GL-3
ISO 6848 WL15	1/8 x 7"	3.2 x 175mm	T187GL	T187GL-3
	5/32 x 7"	4.0 x 175mm	T5327GL	
2% Ceriated	.020 x 7"	0.5 x 175mm	T0207GC2	
	.040 x 7"	1.0 x 175mm	T0407GC2	
Gray	1/16 x 7"	1.6 x 175mm	T1167GC2	T1167GC2-3
AWS A5.12 EWCe-2	3/32 x 7"	2.4 x 175mm	T3327GC2	T3327GC2-3
ISO 6848 WC20	1/8 x 7"	3.2 x 175mm	T187GC2	T187GC2-3
(Formerly Orange)	5/32 x 7"	4.0 x 175mm	T5327GC2	
Pure	.020 x 7"	0.5 x 175mm	T0207G	
	.040 x 7"	1.0 x 175mm	T0407G	
Green	1/16 x 7"	1.6 x 175mm	T1167G	T1167G-3
AWS A5.12 EWP	3/32 x 7"	2.4 x 175mm	T3327G	T3327G-3
ISO 6848 WP	1/8 x 7"	3.2 x 175mm	T187G	T187G-3
	5/32 x 7"	4.0 x 175mm	T5327G	
2% Lanthanated	.020 x 7"	0.5 x 175mm	T0207GL2	
	.040 x 7"	1.0 x 175mm	T0407GL2	
Blue	1/16 x 7"	1.6 x 175mm	T1167GL2	T1167GL2-3
AWS A5.12 EWLa-2	3/32 x 7"	2.4 x 175mm	T3327GL2	T3327GL2-3
ISO 6848 WL20	1/8 x 7"	3.2 x 175mm	T187GL2	T187GL2-3
	5/32 x 7"	4.0 x 175mm	T5327GL2	
LaYZr™	.020 x 7"	0.5 x 175mm	T0207GTM	
	.040 x 7"	1.0 x 175mm	T0407GTM	
Chartreuse	1/16 x 7"	1.6 x 175mm	T1167GTM	T1167GTM-3
AWS A5.12 EWG	3/32 x 7"	2.4 x 175mm	T3327GTM	T3327GTM-3
ISO 6848	1/8 x 7"	3.2 x 175mm	T187GTM	T187GTM-3
	5/32 x 7"	4.0 x 175mm	T5327GTM	

TIG welding electrodes usually contain small quantities of metallic oxides, which can offer the following benefits:

- Facilitate arc starting
- Increase arc stability
- Improve current carrying capacity of the electrode
- Reduce the risk of weld contamination
- Increase electrode life

TUNGSTEN STICK OUT GAUGE

- Loosen knurled lock nut
- Turn threaded gauge rod to adjust gauge depth (markings are in 1/16th inch increments)
- Lock gauge by turning knurled lock nut firmly against the gauge body



STICK-OUT GAUGE

DESCRIPTION	ORDER #	DETAILS
Standard Gauge	TG1	Includes convenient key ring
Small Tunsten Gauge	TG1-24