



# XTR 0.8% Zirconiated

Tungsten EWZr-8 (WZr 8)

## Description:

Tungsten is a rare metallic element used for manufacturing gas tungsten arc welding (GTAW) electrodes. The GTAW process relies on tungsten's hardness and high-temperature resistance to carry the welding current to the arc. Tungsten has the highest melting point of any metal, 3,410 degrees Celsius.

## Typical Applications:

Zirconiated tungsten electrodes (AWS classification EWZr-8) contain a minimum of 98.60 percent tungsten and 0.7 to 0.9 percent zirconium. A zirconiated tungsten electrode produces an extremely stable arc and resists tungsten spitting. It is ideal for AC welding because it retains a balled tip and has a high resistance to contamination. Its current-carrying capability is equal to or greater than that of thoriated tungsten. Under no circumstances is zirconiated recommended for DC welding.

## Standards, Specifications, Typical Analysis:

|                               |                                  |                          |           |                      |
|-------------------------------|----------------------------------|--------------------------|-----------|----------------------|
| Classification                | EWZr-8 – ANSI/AWS A5.12, ISO6848 |                          |           | Tungsten (W) Balance |
| Principle Oxide, Mass Percent | ZrO <sub>2</sub> 0.7-0.9%,       | Impurities Mass Percent: | 0.5% Max, |                      |
| Color Code per AWS            | White #FFFFFF                    |                          |           |                      |

|                          | 1.5% & 2%<br>Lanthanated<br>(Gold) (Blue) | 0.8%<br>Zirconiated<br>(White) | 2% Thoriated<br>(Red) | 2% Ceriated<br>(Gray) | Pure<br>(Green) |
|--------------------------|---|--------------------------------|-----------------------|-----------------------|-----------------|
| AC Current               | ✓   | ✓                              |                       | ✓                     | ✓               |
| DC Current               | ✓   |                                | ✓                     | ✓                     |                 |
| Aluminum                 | ✓   | ✓                              |                       | ✓                     | ✓               |
| Mild Steel               | ✓   |                                | ✓                     | ✓                     |                 |
| Stainless Steel          | ✓   |                                | ✓                     | ✓                     |                 |
| Copper Alloys            | ✓   |                                | ✓                     | ✓                     |                 |
| Titanium                 | ✓   |                                | ✓                     | ✓                     |                 |
| ARC Ignition             | 5   | 5                              | 5                     | 4                     | 4               |
| Tungsten Life            | 4   | 3                              | 5                     | 4                     | 4               |
| ARC Stability            | 4   | 5                              | 5                     | 4                     | 4               |
| AC Performance           | 4 5                                       | 5                              | -                     | 3                     | 3               |
| Contamination Resistance | 3   | 5                              | 5                     | 4                     | 3               |

Information provided is a guide, individual results may vary depending on welders skill level, machine & base metal

✓ means a good or great performance

Numbers 1-5, 5 being very good/excellent and 1 meaning not very good

## Approximate current/amperage ranges:

| Diameter |      | Direct Current (DC)*   |             |                        |            | Alternating Current (AC)* |            |
|----------|------|------------------------|-------------|------------------------|------------|---------------------------|------------|
| Inch     | MM   | Electrode Negative (-) |             | Electrode Positive (+) |            | Pure Tungsten             | With Oxide |
|          |      | Pure Tungsten          | With Oxide  | Pure Tungsten          | With Oxide | Pure Tungsten             | With Oxide |
| .020     | 0.50 | 2 to 20                | 2 to 20     | Na                     | Na         | 2 to 15                   | 2 to 15    |
| .040     | 1.00 | 10 to 75               | 10 to 75    | Na                     | Na         | 15 to 55                  | 15 to 70   |
| 1/16     | 1.6  | 60 to 150              | 60 to 150   | 10 to 20               | 10 to 20   | 45 to 90                  | 60 to 125  |
| 3/32     | 2.4  | 120 to 220             | 150 to 250  | 15 to 30               | 15 to 30   | 80 to 140                 | 120 to 210 |
| 1/8      | 3.2  | 160 to 310             | 225 to 330  | 20 to 35               | 20 to 35   | 150 to 190                | 150 to 250 |
| 5/32     | 4.0  | 275 to 450             | 350 to 480  | 35 to 50               | 35 to 50   | 180 to 260                | 240 to 350 |
| 3/16     | 4.8  | 380 to 600             | 480 to 650  | 50 to 70               | 50 to 70   | 240 to 350                | 330 to 450 |
| 1/4      | 6.4  | 575 to 900             | 750 to 1000 | 70 to 125              | 70 to 125  | 325 to 450                | 450 to 600 |

Note: If no value is given, no recommendation is available

\* The current values are based on use of argon gas, these values may vary depending on the type of shielding gas, type of equipment and application.

Credit AWS A5.12M/A5.12:2009 (ISO 6848:2004) Table A.2



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