



Quality Management System  
in accordance with  
**ISO 9001:2000**  
Cert # 05-R0925

# ZIRCONIUM 702 ZR2 Welding Wire

U.S. ALLOY CO.  
dba Washington Alloy  
7010-G Reames Rd.  
Charlotte, NC 28216  
[www.weldingwire.com](http://www.weldingwire.com)



## ALLOY DESCRIPTION AND APPLICATION:

Zirconium is a reactive metal and is sensitive to embitterment by oxygen, nitrogen and hydrogen above 1100° F (590°C). ERZr2 is a commercially pure zirconium weld alloy that is used in pressure vessels, heat exchangers, piping, tanks, mixers, pumps, valves and many other corrosion resistance needs for chemical or mechanical equipment. ZR2 is known as the workhorse grade in the Zirconium welding family and will need protected using an inert shielding gas from it melting point of 3334°F (1835°C) to below 600°F(315°C) as will the entire work area. Cleanness and gas protection during the entire welding process is very important for high quality results that are needed when working with these alloys. Also found to successfully weld zirconium to titanium, tantalum, niobium (columbium) and vanadium however the weld metal will be stringer and less ductile than the base metals.

## TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2

Filler Wire Size	Tungsten <sup>T</sup>	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16-1/8"	80-150	12-15	1/2-3/4"	20	1/16-1/8"
3/32"	3/32-1/8"	130-200	12-15	1/2-3/4"	20	1/8- 3/16"
1/8"	1/8-5/32"	180-225	12-15	1/2-3/4"	25	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes. <sup>T</sup> (20-30° taper with end blunted slightly)

## TYPICAL CHEMISTRY (%) & WELD METAL PROPERTIES;

	AWS Spec.		
Zirconium + Hafnium	99.0 min	Tensile Strength (psi)	55,000
Hafnium	4.50 max.	Yield Strength (psi)	30,000
Iron + Chromium	0.20 max.	Elongation in 2"	16% min.
Oxygen	0.11-0.15		
Nitrogen	0.015 max.		
Carbon	0.030 max.		
Hydrogen	0.005 max.		

**AVAILABLE SIZES:** .045, 1/16, 3/32, 1/8

**SPECIFICATIONS;** ANSI/AWS A5.24  
ASME SFA A5.24

ERZR2  
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