

# Crown R AZ61A

Gas Tungsten Arc Welding  
(GTAW) TIG Wire

Magnesium



*"The Royal Line"*

**CROWN** ALLOYS COMPANY

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## Premium Bare Magnesium TIG Alloy

### Typical Applications

The **Crown R AZ61A** is used to weld cast and wrought magnesium structural shapes, sheets and castings. Magnesium is often used in the fabrication of dock plates and boards, chainsaw guides and housings, scoops, oil pans, power tool housings, etc. Some of the base alloys that can be welded using **R AZ61A** are AZ10A, AZ31B, AZ61A, AZ80A, ZK21A and AM60.

### Specifications

AWS A 5.19

Mechanical properties of magnesium welded joints will vary depending on the chemical composition of the base metal. Approximate weld properties would be:

- Tensile Strength 35,000 psi
- Yield Strength 22,000 psi
- Elongation in 2" 4%

### Procedure

**Crown R AZ61A** can be welded using techniques and equipment similar to those used for aluminum.

**Alternating current (AC)** is preferred because of a combination of good arc cleaning action and good joint penetration, although direct current (DC) can also be used. Direct current with the electrode positive (DCEP) provides excellent cleaning action but is limited to thin magnesium.

Argon is generally the preferred **shielding gas** when welding in the AC setting. On heavier sections, the addition of helium may be considered, and arc penetration will increase significantly. Gas flow rates must be increased when helium is added.

The proper **tungsten** depends on the GTAW power source used. When using older NON-inverter GTAW machines, a pure tungsten electrode is preferred. When utilizing a newer inverter based GTAW machine, a ceriated, lanthanated or zirconiated tungsten that is sharpened to a truncated point is preferred.

Clean area to be welded, removing all surface oxides. Preheat base metal to 400°F. Peen weld while still hot in order to relieve stress. Allow to cool slowly after welding. A post weld heat treatment is recommended to achieve maximum tensile strength.

### Sizes and Part Numbers

Diameter	Part Numbers	
	1# Package	3# Package
3/32 x 36"	XTAZ61/TN-BP	XTAZ61/TN
1/8 x 36"	XTAZ61/TO-BP	XTAZ61/TO



**!!!! WARNING !!!!**



**WELDING FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH.**

**BEFORE USING THIS PRODUCT THE WELDER (END-USER) MUST READ AND UNDERSTAND THE COMPLETE PRODUCT WARNING LABEL AND THE NEW 16 SECTION SAFETY DATA SHEET (SDS).**

**THE SAFETY DATA SHEET (SDS) WHICH OUTLINES THE POTENTIAL HEALTH HAZARDS AND SAFETY INFORMATION RELATED TO THIS PRODUCT CAN BE DOWNLOADED FROM THE SDS PORTION OF THIS WEBSITE. IT IS ALSO AVAILABLE FROM YOUR EMPLOYER AND WELDING SUPPLY DISTRIBUTOR.**

**DO NOT PROCEED WITH USE OF THIS PRODUCT UNTIL YOU READ AND UNDERSTAND THE SAFETY DATA SHEET (SDS) AND PRODUCT WARNING STATEMENT.**

**BE SURE TO CONSULT THE LATEST VERSION OF THE SDS.**

**SEE THE PRODUCT WARNING LABEL AND SDS FOR COMPLETE WARNING INFORMATION.**

