

H-ADVANCED WELCO

COBALT 6 TIG ROD

PRODUCT DATA SHEET
AWS STANDARD: ERCoCr-A

Company	H-Advanced Welco
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1. Product Description

ERCoCr-A Cobalt 6 TIG Rod is a cobalt-chromium-tungsten hardfacing filler metal for gas tungsten arc welding (GTAW/TIG). It produces a medium-hard cobalt alloy deposit with a balanced combination of wear resistance, corrosion resistance and resistance to mechanical degradation over a broad temperature range. It bonds well to many weldable steels, including stainless steels, when used with an appropriate procedure.

The product is supplied in straight TIG rod lengths and is available in 1.6 mm, 2.4 mm and 3.2 mm diameters.

2. Typical Applications

- Hardfacing of valve seats, valve trim and sealing surfaces.
- Pump components, shafts, sleeves and wear surfaces.
- Cutting, forming and hot-work tooling.
- Components subject to galling, cavitation, erosion and moderate abrasion.
- High-temperature wear and corrosion service.

3. Key Features

- Balanced resistance to abrasion and impact.
- Good galling and cavitation-erosion resistance.
- Good corrosion and oxidation resistance in many service environments.
- Retains useful hardness at elevated temperature.
- Suitable for hardfacing and repair by GTAW / TIG.

4. Product Range

Product	Diameter	Form	Typical Use
ERCoCr-A Cobalt 6 TIG Rod	1.6 mm	Straight TIG rod	Precision hardfacing / light build-up
ERCoCr-A Cobalt 6 TIG Rod	2.4 mm	Straight TIG rod	General hardfacing and repair
ERCoCr-A Cobalt 6 TIG Rod	3.2 mm	Straight TIG rod	Heavier build-up / repair work

5. Chemical Composition (AWS A5.21 ERCoCr-A)

Element	AWS Composition
Carbon (C)	0.9% – 1.4%
Chromium (Cr)	26.0% – 32.0%
Tungsten (W)	3.0% – 6.0%
Nickel (Ni)	3.0% max

Element	AWS Composition
Iron (Fe)	3.0% max
Silicon (Si)	2.0% max
Manganese (Mn)	1.0% max
Molybdenum (Mo)	1.0% max
Other Elements	0.50% max
Cobalt (Co)	Remainder

6. Mechanical / Deposit Properties

Typical deposited weld-metal properties are shown below. Actual values depend on dilution, number of layers, base material and welding procedure.

Property	Typical Value
Hardness – 2 Layer Deposit	40 – 42 HRC
Deposit Type	Medium-hard cobalt-chromium-tungsten alloy
Impact / Abrasion Balance	Good balance of abrasion and impact resistance
High-Temperature Performance	Designed to retain wear resistance over a broad temperature range

7. Welding Information

Process	GTAW / TIG
Shielding Gas	Argon
Polarity	DC electrode negative (DCEN)
Technique	Use clean base material and controlled heat input. Preheat and interpass temperature should be selected to suit the base material, component geometry and qualified hardfacing procedure.
Surface Preparation	Remove oil, grease, scale, oxides, paint and other contaminants. Remove damaged or cracked material before hardfacing where required.

8. Storage & Handling

Store rods in a clean, dry area away from moisture, dirt, oils and chemicals. Keep packaging closed until required for use. Protect rods from surface contamination and physical damage.

9. Standards & Classification

AWS Standard: ERCoCr-A

Classification: AWS A5.21 ERCoCr-A. Common industry description: Cobalt 6 / Cobalt Alloy 6. Where certified chemistry or deposited properties are required, refer to the Certificate of Conformity / Certificate of Analysis for the supplied batch.

10. Important Notice

The information in this data sheet is intended as general technical guidance. Deposit properties and service performance depend on base-metal composition, dilution, number of layers, joint or overlay design, welding parameters, operator technique and service conditions. Users are responsible for establishing and qualifying a suitable welding procedure for their application.

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