

Nickel Alloy Wire

Alloy: WWNA617
 Class: ERNiCrCoMo-1

Conforms to Certification: AWS A5.14
 ASME SFA A5.14

Alloy: ERNiCrCoMo-1 (Alloy 617)
 Weld Process: GMAW, GTAW Welding Processes

AWS Chemical Composition Requirements

C = 0.05 – 0.15	Cu = 0.50 max
Mn = 1.0 max	Ni = Remainder
Fe = 3.0 max	Co = 10.0 – 15.0
P = 0.03 max	Al = 0.8 – 1.5
S = 0.015 max	Ti = 0.60 max
Si = 1.0 max	Cr = 20.0 – 24.0
Other = 0.50 max	Mo = 8.0 – 10.0

Deposited All Weld Metal Properties % (AW)

Tensile Strength	112,000psi
Yield Strength	88,500psi
Elongation	28%

Deposited Chemical Composition % (Typical)

C = 0.06	P = 0.005	Ni = Balance
Mn = 0.20	S = 0.001	Cr = 21.8
Fe = 0.75	Al = 1.25	Mo = 9.05
Co = 12.45		

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ERNiCrCoMo-1 is used for welding nickel-chromium-cobalt-molybdenum base material using both the gas tungsten arc and gas metal arc process. Also other cast heat-resisting alloy and dissimilar metals for high temperature service up to 2100° F.

Recommended Welding Parameters for TIG and MIG Welding of Nickel Alloys

<u>Process</u>	<u>Diameter of Wire</u>	<u>Voltage (V)</u>	<u>Amperage (A)</u>	<u>Gas</u>
Tig	.035 inches x 36	12 -15	60 -90	100% Argon
	.045 inches x 36	13 -16	80 - 110	100% Argon
	1/16 inches x 36	14 - 18	90 - 130	100% Argon
	3/32 inches x 36	15 – 20	120 -175	100% Argon
	1/8 inches x 36	15 – 20	150 - 220	100% Argon
MIG	.035 inches	26 – 29	150 – 190	75% Argon + 25% Helium
	.045 inches	28 – 32	180 – 220	75% Argon + 25% Helium
	1/16 inches	29 – 33	200 - 250	75% Argon + 25% Helium

Note: Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, cost, and Operability into consideration.

