

Nickel Alloy Wire

Alloy: WWNA622  
Class: ERNiCrMo-10

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

Alloy: ERNiCrMo-10 (Alloy 622)  
Weld Process: GMAW, GTAW and ASAW Welding Processes

AWS Chemical Composition Requirements

C = 0.015 max      Cu = 0.50 max  
Mn = 0.50 max      Ni = Remainder  
Fe = 2.0 – 6.0      Co = 2.5 max  
P = 0.02 max      Cr = 20.0 – 22.5  
S = 0.01 max      Mo = 12.5 – 14.5  
Si = 0.08 max      V = 0.35 max  
Other = 0.50 max    W = 2.5 – 3.5

Deposited All Weld Metal Properties % (AW)

Tensile Strength      115,000psi  
Yield Strength      82,000psi  
Elongation      38%

Deposited Chemical Composition % (Typical)

C = 0.008      Cr = 21.5      Ni = Balance  
Fe = 3.1      Mo = 13.5      W = 3.0

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ERNiCrMo-10 is used for welding nickel-chromium-molybdenum base materials to themselves, steel and other nickel base alloys, and for cladding steels. Can be used to weld duplex, super duplex stainless steels.

Recommended Welding Parameters for TIG, MIG, and SAW 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
SAW	3/32 inches	28 – 30	275 – 350	Suitable Flux may be used
	1/8 inches	29 – 32	350 – 450	Suitable Flux may be used
	5/32 inches	30 – 33	400 – 550	Suitable Flux may be used

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

Note: Both agglomerated and fused fluxes can be used for submerged arc welding.

Note: The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and mechanical properties.

