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ERNiCrMo-4

Alloy: ERNiCrMo-4 (Alloy C276)

Weld Process: GMAW, GTAW Welding Processes

AWS Chemical Composition Requirements	
Element	Composition (%)
C (Carbon)	0.02 max
Cu (Copper)	0.50 max
Mn (Manganese)	1.0 max
Ni (Nickel)	Remainder
Fe (Iron)	4.0 – 7.0
Co (Cobalt)	2.5 max
P (Phosphorus)	0.04 max
Cr (Chromium)	14.5 – 16.5
S (Sulfur)	0.03 max
Mo (Molybdenum)	15.0 – 17.0
Si (Silicon)	0.08 max
W (Tungsten)	3.0 – 4.5
V (Vanadium)	0.35 max
Other Elements	0.50 max

Deposited Chemical Composition % (Typical)	
Element	Composition (%)
C (Carbon)	0.01
Cr (Chromium)	15.55
Ni (Nickel)	Balance
Mn (Manganese)	0.55
Mo (Molybdenum)	16.1
Si (Silicon)	0.04
Fe (Iron)	5.5
W (Tungsten)	3.65

Deposited All Weld Metal Properties % (AW)	
Mechanical Property	Value
Tensile Strength	105,000 psi
Yield Strength	81,000 psi
Elongation	40%



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Application

ERNiCrMo-4 is ideal for welding nickel-chromium-molybdenum alloys to themselves, steel, and other nickel alloys, and for steel cladding.

Welding Parameters for TIG and MIG Welding of Nickel Alloys				
Process	Diameter of Wire	Voltage (V)	Amperage (A)	Gas
TIG	.035 inches x 36	Dec-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

Various shielding gases can be used for MIG and TIG welding, selected based on quality, cost, and operability.

