

NICKEL ALLOY WIRE DMG-3

Alloy: ERNiCrMo-9 (Alloy G3)

Weld Process: GMAW & GTAW

AWS A5.14 / ASME SFA 5.14

Application

ERNiCrMo-9 is used for welding nickel-chromium-molybdenum base materials to themselves, steel and other nickel base alloys, and for cladding steels.

AWS Chemical Composition Requirements

C	Mn	Fe	P	S	Si	Cu	Ni	Co	Cr	Nb+Ta	Mo	W	Other
0.015 max	1.0 max	18.0 - 21.0	0.04 max	0.03 max	1.0 max	1.5 - 2.5	Remainder	5.0 max	21.0 - 23.5	0.50 max	6.0 - 8.0	1.5 max	0.50 max

Deposited Chemical Composition % (Typical)

C	Cu	Co	Cr	Mo	Ni	Fe
0.01	2.0	2.75	22.0	7.1	Balance	20.5

Deposited All Weld Metal Properties % (AW)

Tensile Strength	Elongation	Charpy-V-Notch Impact
96,000psi	29%	Not applicable

Recommended Welding Parameters for TIG and MIG Welding of Nickel Alloys

Process	Diameter of Wire	Voltage (V)	Amperage (A)	Gas
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

Notes

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