

NICKEL ALLOY WIRE DMNA622

Alloy: ERNiCrMo-10 (Alloy 622) Weld Process: GMAW, GTAW & SAW AWS A5.14 / ASME SFA 5.14

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.

AWS Chemical Composition Requirements

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

Deposited Chemical Composition % (Typical)

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

Deposited All Weld Metal Properties % (AW)

Tensile Strength	Yield Strength	Elongation	Charpy-V-Notch Impact
115,000psi	82,000psi	38%	Not applicable

Recommended Welding Parameters for TIG, MIG, and SAW 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
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

Notes

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.