



# PRODUCT

## DATA SHEET

### Nickel Alloy Wire

Weld Process: GMAW, GTAW & SAW

Alloy: ERNiCr-3 (Alloy 82) Class : ERNiCr-3  
 Conforms to Certification: AWS A5.15 ASME SFA 5.15

Alloy: DMNA082

AWS Chemical Composition Requirements

C = 0.10 max      Cu = 0.50 max  
 Mn = 2.5 – 3.5      Ni = 67.0 min  
 Fe = 3.0 max      Co = 0.12 max  
 P = 0.03 max      Ti = 0.75 max  
 S = 0.015 max      Cr = 18.0 – 22.0  
 Si = 0.50 max      Cb/Ta = 2.0 – 3.0  
 Other = 0.50 max

C = 0.03      P = 0.003      Ni = 72.9  
 Mn = 2.85      S = 0.001      Cr = 20.4  
 Fe = 1.1      Si = 0.22      Cb/Ta = 2.5

Deposited All Weld Metal Properties % (AW)

Tensile Strength      85,500psi  
 Yield Strength      52,500psi  
 Elongation      38%

Deposited Chemical Composition % (Typical)

Deposited Charpy-V-Notch Impact Properties %

Not applicable

Application

ERNiCr-3 (NA82) is used for welding Inconel alloy 600 and Incoloy 800, overlaying on steel and various dissimilar metal welding applications. Weld processes which can be used include GTAW, GMAW and SAW.

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

