



ERNiCr-3 DATA SHEET

Pinnacle Alloys ERNiCr-3 (82)

AWS CLASS ERNiCr-3

CODE AND SPECIFICATION DATA:

AWS A5.14 ASME SFA 5.14; UNS N06082

DESCRIPTION:

Pinnacle Alloys ERNiCr-3 has a nominal composition (wt.-%) of 72 Ni, 20 Cr, 3 Mn, 2.5 Nb + Ta. Filler metal of this classification is used for welding nickel-chromium-iron alloys (ASTM B 163, B 166, B 167, and B 168 having UNS Number N06600) to itself and for the clad side of joints in steel clad with nickel-chromium-iron alloy. It can also be used for surfacing steel with nickel-chromium-iron weld metal, for dissimilar welding of nickel-base alloys, and for joining steel to stainless steel or nickel-base alloys using GTAW, GMAW, SAW, and PAW processes. Pinnacle Alloys ERNiCr-3 provides high strength and good corrosion resistance, resists oxidation, and delivers creep-rupture strength at elevated temperatures. It is ideal for welding in desalination plants because it is formulated to resist pitting corrosion and stress-corrosion cracking in chloride containing environments. Pinnacle Alloys ERNiCr-3 is also well suited for welding in a variety of temperatures – from cryogenic to elevated – in such applications as piping, furnace equipment, and petrochemical and power generation plants.

DIAMETERS: .035", .045", 1/16", 3/32", 1/8", 5/32"**WELDING POSITIONS:** GTAW & GMAW: All positions



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TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.10	0.03
Chromium (Cr)	18.0-22.0	20.22
Cobalt (Co)	0.12*	0.016
Copper (Cu)	0.50	0.012
Iron (Fe)	3.00	1.16
Manganese (Mn)	2.5-3.5	3.03
Nickel (Ni)	67.0 min	72.54
Phosphorus (P)	0.03	0.004
Silicon (Si)	0.50	0.098
Sulfur (S)	0.015	0.001
Titanium (Ti)	0.75	0.36
Niobium (Nb) + Tantalum (Ta)	2.0-3.0*	2.42

NOTE: Single values are maximums.

*Additional customer requirements may apply.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	Not required	96,000 psi (660 MPa)
Percent Elongation in 2"	Not required	45%

TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	1/16"	90-130		100% Ar
	3/32"	120-175		
	1/8"	150-220		
GMAW	.035"	150-190	26-29	75% Ar/ 25% He
	.045"	180-220	28-32	
	1/16"	200-250	29-33	
SAW	3/32"	275-350	28-30	Suitable Flux
	1/8"	350-450	29-32	
	5/32"	400-550	30-33	

NOTE: Maintaining a proper welding procedure, including pre-heat and interpass temperatures, may be critical depending on the type and thickness of material being welded.



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NOTICE: The results reported are based upon testing of the product under controlled laboratory conditions in accordance with American Welding Society Standards. Actual use of the product may produce different results due to varying conditions. An example of such conditions would be electrode size, plate chemistry, environment, weldment design, fabrication methods, welding procedure and service requirements. Thus the results are not guarantees for the use in the field. The manufacturer disclaims any warranty of merchantability of fitness for any particular purpose with respect to its products.

CAUTION: Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standards A49.1, "Safety in Welding and Cutting," published by the American Welding Society, 8669 NW 36 Street, #130, Miami, FL 33126: OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys SDS sheets may be obtained on the website below.