



ISO 9001:2015 REGISTERED  
Certificate No.: 50040 & 50415

## ENiCrMo-3 DATA SHEET

### Pinnacle Alloys ENiCrMo-3 (112)

AWS CLASS ENiCrMo-3

#### CODE AND SPECIFICATION DATA:

AWS A5.11 ASME SFA 5.11; UNS W86112

#### DESCRIPTION:

Pinnacle Alloys ENiCrMo-3 has a nominal composition (wt.-%) of 60 Ni, 22 Cr, 9 Mo, 5 Fe, 3.5 Nb + Ta. Electrodes of this classification are used for welding nickel-chromium-molybdenum alloys to themselves and to steel, and for surfacing steel with nickel-chromium-molybdenum weld metal. These electrodes also can be used for welding nickel-base alloys to steel. The electrodes are used in applications where the temperature ranges from cryogenic to 1000°F. Typical specifications for the nickel-chromium-molybdenum base metals are ASTM B 443, B 444, and B 446, all of which have UNS Number N06625.

Pinnacle Alloys ENiCrMo-3 has moderate strength and exceptional corrosion resistance. This versatile electrode is utilized for welding piping systems and reactor components in the power generation industry and for high temperature service in an array of other engineering applications, including petrochemical plants and furnace equipment. Pinnacle Alloys ENiCrMo-3 is excellent for overlaying on steel where exceptional corrosion resistance is required, such as chloride contaminated cooling water in heat exchangers, as well as offshore and marine environments.

**TYPE OF CURRENT:** Direct Current Electrode Positive (DCEP)

**DIAMETERS:** 3/32", 1/8", 5/32", 3/16"

**WELDING POSITIONS:** All positions

5/32" & 3/16" recommended for use in flat & horizontal positions only



[www.pinnaclealloys.com](http://www.pinnaclealloys.com)

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### TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.10	0.08
Chromium (Cr)	20.0-23.0	21.3
Cobalt (Co)	0.12*	0.01
Copper (Cu)	0.50	0.07
Iron (Fe)	7.00	1.50
Manganese (Mn)	1.00	0.27
Molybdenum (Mo)	8.0-10.0	8.40
Nickel (Ni)	55.0 min	64.2
Phosphorus (P)	0.03	0.01
Silicon (Si)	0.75	0.49
Sulfur (S)	0.02	0.003
Niobium (Nb) + Tantalum (Ta)	3.15-4.15	3.65

NOTE: Single values are maximums.

\*Additional customer requirements may apply.

### TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	110,000 psi (760 MPa)	112,000 psi (770 MPa)
Percent Elongation in 2"	30%	42%

### TYPICAL WELDING PARAMETERS:

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP	70-90	65-80	20-23
1/8"	DCEP	80-110	75-95	21-24
5/32"	DCEP	120-160	Not recommended	22-25
3/16"	DCEP	170-190	Not recommended	23-26

**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.**

**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.

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