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

ENiCrMo-13 DATA SHEET

Pinnacle Alloys ENiCrMo-13 (59)
AWS CLASS ENiCrMo-13
CODE AND SPECIFICATION DATA:
AWS A5.11 ASME SFA 5.11; UNS W86059

DESCRIPTION:
Pinnacle Alloys ENiCrMo-13 has a nominal composition (wt.-%) of 59 Ni, 23 Cr, 16 Mo, 1 Fe, low C. Electrodes of this classification are used to weld low carbon nickel-chromium-molybdenum alloys, for welding the clad side of joints in steel clad with low-carbon nickel-chromium-molybdenum alloys, and for welding low carbon nickel-chromium-molybdenum alloy to steel and to other nickel-base alloys. Typical specifications for the nickel-chromium-molybdenum base metals are ASTM B 574, B 575, B 619, B 622, and B 626, all of which have UNS Number N06059.

Pinnacle Alloys ENiCrMo-13 provides superb corrosion resistance and high mechanical strength due to its outstanding weldability and very low sensitivity to hot cracking. Due to its chemical composition, this electrode is resistant to attack by chloride ions in low pH media. Pinnacle Alloys ENiCrMo-13 is not prone to grain-boundary precipitation during hot forming and welding. It is, therefore, a good choice for welding in the corrosive environment of chemical processing plants.

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

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TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.02	0.005
Chromium (Cr)	22.0-24.0	22.9
Copper (Cu)	0.50	0.003
Iron (Fe)	1.50	1.10
Manganese (Mn)	1.00	0.30
Molybdenum (Mo)	15.0-16.5	15.1
Nickel (Ni)	Balance	59.7
Phosphorus (P)	0.015	0.013
Silicon (Si)	0.20	0.10
Sulfur (S)	0.01	0.002

NOTE: Single values are maximums.
*Additional customer requirements may apply.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	100,000 psi (690 MPa)	107,000 psi (740 MPa)
Percent Elongation in 2”	25%	47%

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 CRF 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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