



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

E309-16/E309H-16 DATA SHEET

Pinnacle Alloys E309-16/E309H-16

AWS CLASS E309-16, E309H-16

CODE AND SPECIFICATION DATA:

AWS A5.4 ASME SFA 5.4; UNS W30910

DESCRIPTION:

Pinnacle Alloys E309-16/E309H-16 has a nominal composition (wt.-%) of 23.5 Cr, 13 Ni, with carbon levels between 0.04 and 0.15. This carbon range is restricted to eliminate the lowest carbon levels. This carbon restriction will provide higher tensile and creep strengths at elevated temperature. This electrode has a typical ferrite content of about 6 FN. Pinnacle Alloys E309-16/E309H-16 is designed for welding similar alloys in wrought or cast form, dissimilar metals (such as joining Type 304 to carbon steel), and the clad side of Type 304 clad steels. This electrode is well suited for joining 304 type stainless steels where severe corrosion conditions exist. This electrode is ideal for welding food machinery and is generally used to weld dissimilar joints and hardenable steels.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP) or AC

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

WELDING POSITIONS: All positions

3/16" is recommended for use in flat and horizontal positions only



TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.04-0.15	0.06
Chromium (Cr)	22.0-25.0	23.1
Copper (Cu)	0.75	0.04
Manganese (Mn)	0.5-2.5	1.80
Molybdenum (Mo)	0.75	0.072
Nickel (Ni)	12.0-14.0	13.6
Phosphorus (P)	0.04	0.02
Silicon (Si)	1.00	0.60
Sulfur (S)	0.03	0.005

NOTE: Single values are maximums.

www.pinnaclealloys.com

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2602 S. 50th Avenue • Phoenix, Arizona 85043 • 1-866-442-9353 • (602) 442-9353 • Fax (602) 442-9354



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FERRITE NUMBER AND PITTING RESISTANCE EQUIVALENT NUMBER:

To obtain Ferrite Numbers or PRE_N, please contact PINNACLE ALLOYS technical support at the number below.

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	80,000 psi (550 MPa)	92,000 psi (635 MPa)
Percent Elongation in 2"	30%	36%

TYPICAL WELDING PARAMETERS:

Diameter	Type of Current	Amperage Range		Voltage Range
		Flat	Out of Position	
3/32"	DCEP or AC	70-90	65-80	20-23
1/8"	DCEP or AC	80-110	75-95	21-24
5/32"	DCEP or AC	120-160	100-120	22-25
3/16"	DCEP or AC	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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