AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER316/316H DATA SHEET

Pinnacle Alloys ER316/316H
AWS CLASS ER316, ER316H
CODE AND SPECIFICATION DATA:
AWS A5.9 ASME SFA 5.9; UNS S31680

DESCRIPTION:
Pinnacle Alloys ER316/316H has a nominal composition (wt.-%) of 19 Cr, 12.5 Ni, 2.5 Mo, with a carbon content restricted to 0.04-0.08. This higher carbon range provides greater tensile and creep strengths at elevated temperatures. It is used for a service temperature up to 1290°F. The presence of molybdenum provides creep resistance at elevated temperatures and pitting resistance in halide atmospheres. It is slightly magnetic. This wire is specially designed for welding 316H base metal, but can also be used for similar materials such as 321/321H and 347/347H. Pinnacle Alloys ER316/316H is well suited for applications in the chemical and petrochemical industries; power generation plants; furnace equipment; turbine components; and the pulp and paper industry.

DIAMETERS: .035", .045", 1/16", 3/32", 1/8", 5/32"

WELDING POSITIONS: GTAW & GMAW: All positions

TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.04-0.08	0.046
Chromium (Cr)	18.0-20.0	18.62
Copper (Cu)	0.75	0.06
Manganese (Mn)	1.00-2.50	1.87
Molybdenum (Mo)	2.00-3.00	2.02
Nickel (Ni)	11.0-14.0	11.28
Nitrogen (N)	N.S.*	0.051
Phosphorus (P)	0.03	0.019
Silicon (Si)	0.30-0.65	0.40
Sulfur (S)	0.03	0.002

*N.S. means Not Specified.
NOTE: Single values are maximums.

SOWESCO, LLC www.pinnaclealloys.com
9384 Wallisville Road • Houston, Texas 77013 • **1-800-856-9353** • (713) 688-9353 • Fax (713) 688-6985
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FERRITE NUMBER AND PITTING RESISTANCE EQUIVALENT NUMBER:

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

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	Not required	94,000 psi (650 MPa)
Percent Elongation in 2”	Not required	35%

TYPICAL WELDING PARAMETERS:

	Diameter	Amperage	Volts	Shielding Gas
GTAW	1/16”	80-110		100% Ar
	3/32”	90-130		
	1/8”	120-175		
	5/32”	150-220		
GMAW Spray Transfer	.030”	130-200	23-27	98% Ar/ 2% O_2 (35 cfh)
	.035”	150-225	23-26	
	.045”	200-325	24-28	
	1/16”	300-350	24-27	
GMAW Short-Circuit	.030”	50-150	14-20	90% He/ 7½% Ar/ 2½% CO_2 (25 cfh)
	.035”	60-200	14-22	
	.045”	75-225	15-23	
	1/16”	100-250	16-23	
SAW	3/32”	275-350	28-30	Suitable Flux
	1/8”	350-450	29-32	

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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