AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER 16-8-2 DATA SHEET

Pinnacle Alloys ER 16-8-2
AWS CLASS ER 16-8-2
CODE AND SPECIFICATION DATA:
AWS A5.9 ASME SFA 5.9; UNS S16880

DESCRIPTION:
Pinnacle Alloys ER 16-8-2 has a nominal composition (wt.-%) of 15.5 Cr, 8.5 Ni, 1.5 Mo. Filler metal of this classification is used primarily for welding stainless steels such as Type 16-8-2, 316, and 347 for high-pressure, high-temperature piping systems. The weld deposit usually has a Ferrite Number no higher than 5 FN. The deposit also has good hot-ductility properties that offer greater freedom from weld or crater cracking, even under restraint conditions. The weld metal is usable in either the as-welded condition or solution-treated condition. This filler metal depends on a very carefully balanced chemical composition to develop its fullest properties. Corrosion tests indicate that the 16-8-2 weld metal may have less corrosion resistance than 316 base metal, depending on the corrosive media. Where the weldment is exposed to severe corrodants, the surface layers should be deposited with a more corrosion-resistant filler metal. Pinnacle Alloys ER 16-8-2 is well suited for welding catalytic crackers, thick wall steam piping, and furnace parts, as well as components in the petrochemical, chemical processing, and power generation industries.

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)	0.10	0.047
Chromium (Cr)	14.5-16.5	15.38
Copper (Cu)	0.75	0.16
Manganese (Mn)	1.0-2.0	1.33
Molybdenum (Mo)	1.0-2.0	1.15
Nickel (Ni)	7.5-9.5	8.01
Nitrogen (N)	N.S.*	0.051
Phosphorus (P)	0.03	0.024
Silicon (Si)	0.30-0.65	0.44
Sulfur (S)	0.03	0.008

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

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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	90,000 psi (620 MPa)
Percent Elongation in 2”	Not required	37%

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	

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.