AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER316LSi DATA SHEET

Pinnacle Alloys ER316LSi
AWS CLASS ER316LSi
CODE AND SPECIFICATION DATA:
AWS A5.9 ASME SFA 5.9; UNS S31688

DESCRIPTION:
Pinnacle Alloys ER316LSi has a nominal composition (wt.-%) of 19 Cr, 12.5 Ni, 2.5 Mo, with a carbon content restricted to 0.03 maximum. This low carbon material reduces the possibility of intergranular carbide precipitation. This increases the resistance to intergranular corrosion without the use of stabilizers, such as niobium or titanium. Strength of this low-carbon alloy however, is less than that of the niobium-stabilized alloys or Type 316 at elevated temperatures. This classification is the same as ER316L, except for the higher silicon content. This improves the usability of the filler metal in the GMAW process. If the dilution by the base metal produces a low ferrite or fully austenitic weld, the crack sensitivity of the weld is somewhat higher than that of the lower silicon content weld metal. Pinnacle Alloys ER316LSi is well suited for applications in the food processing and chemical industries; architecture and shipbuilding; where a very good corrosion resistance is required, such as in acid media and/or in chlorinated solutions.

DIAMETERS: .025”, .030”, .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)	0.03	0.012
Chromium (Cr)	18.0-20.0	18.24
Copper (Cu)	0.75	0.15
Manganese (Mn)	1.00-2.50	1.66
Molybdenum (Mo)	2.00-3.00	2.54
Nickel (Ni)	11.0-14.0	11.37
Nitrogen (N)	N.S.*	0.065
Phosphorus (P)	0.03	0.021
Silicon (Si)	0.65-1.00	0.78
Sulfur (S)	0.03	0.006

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

SOWESCO, LLC www.pinnaclealloys.com
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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	83,000 psi (570 MPa)
Percent Elongation in 2”	Not required	42%

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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