AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

ER309LSi DATA SHEET

Pinnacle Alloys ER309LSi
AWS CLASS ER309LSi
CODE AND SPECIFICATION DATA:
AWS A5.9 ASME SFA 5.9; UNS S30988

DESCRIPTION:
Pinnacle Alloys ER309LSi has a nominal composition (wt.-%) of 24 Cr, 13 Ni, 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 309 at elevated temperatures. This classification is the same as ER309L, 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. Filler metals of this classification are commonly used to weld Type 304 and similar base metals where severe corrosion conditions exist requiring higher alloy weld metal. They are used in dissimilar metal welds, such as joining Type 304 to carbon steel. This grade may be used for joining and overlay of stainless steels similar in composition, such as AISI 309 castings. Pinnacle Alloys ER309LSi is well suited for beverage tanks and food service applications.

DIAMETERS: .025”, .030”, .035”, .045”, 1/16”, 3/32”, 1/8”, 5/32”

WELDING POSITIONS: All positions

TYPICAL DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.03	0.015
Chromium (Cr)	23.0-25.0	23.10
Copper (Cu)	0.75	0.09
Manganese (Mn)	1.00-2.50	1.76
Molybdenum (Mo)	0.75	0.10
Nickel (Ni)	12.0-14.0	13.82
Nitrogen (N)	N.S.*	0.057
Phosphorus (P)	0.03	0.019
Silicon (Si)	0.65-1.00	0.74
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
2602 S. 50th Avenue • Phoenix, Arizona 85043 • **1-866-442-9353** • (602) 442-9353 • Fax (602) 442-9354

Pinnacle Alloys

AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

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	85,000 psi (590 MPa)
Percent Elongation in 2”	Not required	39%

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.