AN ISO 9001:2015 COMPANY
CERTIFICATE NO.: C755336

E309LMoT1-1/4 DATA SHEET

Pinnacle Alloys E309LMoT1-1/4
AWS CLASS E309LMoT1-1, E309LMoT1-4
CODE AND SPECIFICATION DATA:
AWS A5.22 ASME SFA 5.22; UNS W30938

DESCRIPTION:
Pinnacle Alloys E309LMoT1-1/4 has a nominal composition (wt.-%) of 23 Cr, 13 Ni, 2.5 Mo, and a maximum carbon content of 0.04. The presence of molybdenum provides pitting resistance in a halide environment and helps provide high temperature ductility in dissimilar joints. The ferrite level for this electrode deposit is approximately 20 FN. These electrodes are used to join stainless steel to carbon and low alloy stainless steel to carbon and low alloy steels for service below 600°F, and for overlaying of carbon and low-alloy steels. Pinnacle Alloys E309LMoT1-1/4 is designed for welding in the pulp and paper industry, chemical processing equipment, and food and beverage equipment. It delivers superb performance characteristics in all positions, has little spatter, and easy-to-remove slag. Minimal weaving is required to achieve a flat, well-washed bead.

TYPE OF CURRENT: Direct Current Electrode Positive (DCEP)

DIAMETERS: .035”, .045”, 1/16”

SHIELDING GAS: 100% CO_2, 75-80% Ar/ balance CO_2, 35-50 cfh

WELDING POSITIONS: All positions
1/16” is recommended for use in flat and horizontal positions only

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 DEPOSIT COMPOSITION:

	AWS Spec	Weld Metal Analysis (%)
Carbon (C)	0.04	0.03
Chromium (Cr)	21.0-25.0	21.96
Copper (Cu)	0.75	0.18
Manganese (Mn)	0.5-2.5	0.85
Molybdenum (Mo)	2.0-3.0	2.9
Nickel (Ni)	12.0-16.0	13.09
Nitrogen (N)	N.S.*	0.05
Phosphorus (P)	0.04	0.026
Silicon (Si)	1.00	0.70
Sulfur (S)	0.03	0.01

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

TYPICAL MECHANICAL PROPERTIES:

	AWS Spec (min)	As Welded
Ultimate Tensile Strength	75,000 psi (520 MPa)	95,100 psi (650 MPa)
Yield Strength	Not required	72,000 psi (500 MPa)
Percent Elongation in 2”	25%	34%

TYPICAL WELDING PARAMETERS:

Diameter	WFS (ipm)	Amperage	Volts	ESO (in.)	Deposition Rate (lbs/hr)
.035”	300	110	25	5/8-3/4”	3.3
	500	**150**	**26**	**5/8-3/4”**	**5.4**
	600	**165**	**27**	**5/8-3/4”**	**6.3**
	700	175	28	5/8-3/4”	7.7
.045”	250	130	24	5/8-3/4”	5.4
	300	**160**	**26**	**5/8-3/4”**	**6.3**
	425	**200**	**28**	**5/8-3/4”**	**9.2**
	780	270	34	5/8-3/4”	16.2
1/16”	150	170	25	3/4-1”	5.4
	195	**215**	**27**	**3/4-1”**	**7.0**
	240	**250**	**28**	**3/4-1”**	**8.6**
	320	305	29	3/4-1”	11.5

Note: Optimum conditions are in boldface type. Parameters reflect CO_2 shielding gas - reduce by 2 volts when using 75-80% Ar/ balance CO_2. 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.