

**ER309LMo (23 12 2 L) DATA SHEET****Pinnacle Alloys ER309LMo**

AWS CLASS ER309LMo (Modified); ISO CLASS 23 12 2 L

CODE AND SPECIFICATION DATA:

ISO 14343-A

DESCRIPTION:

Pinnacle Alloys ER309LMo has a nominal composition (wt.-%) of 24 Cr, 13 Ni, with a carbon content restricted to 0.03 maximum. It is very similar to ER309, except for the addition of 2.0-3.5% Mo to increase its pitting corrosion resistance in halide-containing environments. This low carbon material reduces the possibility of intergranular carbide precipitation. This wire has a typical maximum service temperature of 575°F. Pinnacle Alloys ER309LMo is specially designed for welding Type 304L, 316L, 317L, and 410 base metals to mild or low-alloy steel. Filler metals of this classification are commonly used to achieve a single-layer overlay with a chemical composition similar to that of a 316 stainless steel. It is also used for the first layer of multilayer overlays with weld metals such as ER316 or ER317 stainless steels. Without the first layer of 309LMo, elements such as chromium and molybdenum might be reduced to unacceptable levels in successive layers by dilution from the base metal.

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)	0.03	0.009
Chromium (Cr)	21.0-25.0	21.38
Copper (Cu)	0.50	0.09
Manganese (Mn)	1.00-2.50	1.42
Molybdenum (Mo)	2.00-3.50	2.61
Nickel (Ni)	11.0-15.5	14.85
Nitrogen (N)	N.S.*	0.056
Phosphorus (P)	0.03	0.019
Silicon (Si)	1.00	0.36
Sulfur (S)	0.02	0.002

*N.S. means Not Specified.

NOTE: Single values are maximums.

SOWESCO, LLC

www.pinnaclealloys.com9384 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

**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 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 CFR 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.