



Unibrazed 309LMo

CLASSIFICATIONS: ISO 14343: 2009 23 12 2 L
 Similar to AWS ER309LMo (*does not meet AWS specification*)

DESCRIPTION: Unibrazed 309LMo is similar to ER309L with the addition of molybdenum to increase pitting corrosion resistance. It is designed for surfacing of low alloy steels and for joining dissimilar stainless steels to improve their corrosion resistance. The chemistry restrictions of the AWS specification ER309LMo results in brittleness and cracking when the hot-rolled wire is drawn or spooled. Therefore, Unibrazed 309LMo has a modified chemistry (see below) to allow the alloy to be further manufactured. *Note: AWS chemistry is not commercially available.*

TYPICAL CHEMISTRY:

C	Cr	Ni	Mo	Mn	Si	P	S	Cu	FN (WRC)
.03 max	*21.0- 25.0	*12.0 – 15.0	2.0 – 3.0	1.0 – 2.5	.30 – .65	.03 Max	.02 Max	.30 Max	10

*AWS A5.9 Cr 23.0-25.0 Ni 12.0-14.0

TYPICAL MECHANICAL PROPERTIES:

Tensile Strength	85,000 psi (585MPa)
Yield Strength	45,000 psi (310 MPa)
Elongation	40%
Charpy Impacts@ -40°C	44 ft lbs. (60 J)

TYPICAL WELDING PARAMETERS:

	Shielding Gas	Gas Flow	Diameter	Voltage	Amperage
GMAW	98/99% Ar +2/1% O 97%Ar + 3% CO ₂	30 - 50 cfh	.035" (.9mm)	26-29	160 /210
			.045" (1.14mm)	28-32	180/2500
			.062" (1.6mm)	29-33	200/280
GTAW	100% Ar		1/16" (1.6mm)	14-18	90/130
			3/32" (2.4mm)	15-20	120/175
			1/8" (3.2mm)	15-20	150/220
SAW	Suitable Flux		3/32" (2.4mm)	28-33	275/350
			1/8" (3.2mm)	29-32	350/450

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 use in the field. The manufacturer disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.