



# Unibraze® 309LMo-T1

**Classification:** AWS A5.22/ASME SFA 5.22 E309LMoT1-1, E309LMoT1-4

UNS W30938

**Description:** Unibraze® 309LMo-T1 is a gas-shielded, flux cored, stainless steel designed to weld in all positions.

The nominal chemistry is the same as E309LT-1 with the addition of 2-3% Mo. The low carbon minimizes carbide precipitation and makes the weld metal more resistance to intergranular corrosion without the use of stabilizers such as Nb and Ti. The addition of Mo provides pitting resistance in a halide environment and helps provide high temperature ductility in dissimilar joints.

## Chemical Composition: (100% CO<sub>2</sub>)

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
<b>Requirement</b>	.04 max	21.0 – 25.0	12.0- 16.0	2.0- 3.0	.50- 2.5	1.0 max	.04 max	.03 max	.75 max
<b>Typical Results</b>	.03	21.4	13.5	2.3	1.40	.60	.03	.01	.19

## Mechanical Properties: (100% CO<sub>2</sub>)

	<b>Requirement</b>	<b>Typical Results</b>
<b>Tensile Strength</b>	75,000 psi min. (520 MPa)	85,430 psi (589 MPa)
<b>Elongation</b>	25% min.	35%

**NOTE:** Strength will be slightly higher with Ar + 20~25% CO<sub>2</sub>

## Optimum Welding Parameters: DC+ (100% CO<sub>2</sub>)

Diameter	Amps	Volts	WFS (IPM)	ESO	Deposition Rate (lbs/hr)
.035"	150	26	500	5/8" -3/4"	5.4
.035"	165	27	600	5/8" -3/4"	6.3
.045"	160	26	300	5/8" -3/4"	6.3
.045"	200	28	425	5/8" -3/4"	9.2
1/16"	215	27	195	3/4" - 1"	7.0
1/16"	250	28	240	3/4" - 1"	8.6

**NOTE:** Lower by ~2 volts when using Ar + 20~25% CO<sub>2</sub>

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.