

## SelectAlloy 309L-AP

### Description:

SelectAlloy 309L-AP is a gas shielded, flux cored, stainless steel electrode designed to weld in all positions. It has a nominal weld metal composition of 24% chromium and 13% nickel with a maximum carbon content of 0.04%. The low carbon minimizes carbide precipitation and makes the weld metal more resistant to intergranular corrosion.

SelectAlloy 309L-AP can be used with 100% carbon dioxide shielding or a blend of 75-80% argon/balance carbon dioxide. Shielding gas mixtures with more than 75-80% argon are not recommended.

### Classifications & Approvals:

- E309LT1-1, E309LT1-4 per AWS A5.22 (Also meets E309T1-1, E309T1-4)
- ABS: E309LT1-1, E309LT1-4
- CWB: E309LT1-1, E309LT1-4

### Characteristics:

SelectAlloy 309L-AP provides superb performance characteristics in all positions, using either 100% CO<sub>2</sub> or 75-80% Ar/balance CO<sub>2</sub> shielding gas. Flat, well washed beads can be achieved with minimal weaving. Spatter is very low and slag peeling is excellent, minimizing cleanup.

### Applications:

SelectAlloy 309L-AP finds application in the welding of refinery and chemical processing equipment, as well as furnace and auto exhaust parts. It is used to weld type 309 stainless steel, to join carbon and low alloy steels to austenitic stainless steels, to weld 304 clad sheets and for first layer cladding of carbon steel.

### Typical Mechanical Properties:

	<u>CO<sub>2</sub></u>	<u>75% Ar/25% CO<sub>2</sub></u>
Ultimate Tensile Strength (psi)	82,000	87,500
Yield Strength (psi)	60,500	64,000
Percent Elongation	38	37

### Typical Weld Deposit Chemistry:

	<u>CO<sub>2</sub></u>	<u>75% Ar/25% CO<sub>2</sub></u>
Carbon (C)	0.03	0.03
Chromium (Cr)	24.3	24.8
Nickel (Ni)	13.0	12.6
Manganese (Mn)	0.95	1.11
Silicon (Si)	0.59	0.76
Ferrite Number (WRC, 1992)	17	21

### Typical Welding Parameters (CO<sub>2</sub>)\*:

<u>Diameter</u>	<u>WFS (ipm)</u>	<u>Amperage</u>	<u>Voltage</u>	<u>CTWD</u>	<u>Dep. Rate (lbs/hr)</u>
.045"	250	130	24	5/8 – 3/4"	5.4
<b>.045"</b>	<b>300</b>	<b>160</b>	<b>26</b>	<b>5/8 – 3/4"</b>	<b>6.3</b>
<b>.045"</b>	<b>425</b>	<b>200</b>	<b>28</b>	<b>5/8 – 3/4"</b>	<b>9.2</b>
.045"	780	270	34	5/8 – 3/4"	16.2
1/16"	150	170	25	3/4 – 1"	5.4
<b>1/16"</b>	<b>195</b>	<b>215</b>	<b>27</b>	<b>3/4 – 1"</b>	<b>7.0</b>
<b>1/16"</b>	<b>240</b>	<b>250</b>	<b>28</b>	<b>3/4 – 1"</b>	<b>8.6</b>
1/16"	320	305	29	3/4 – 1"	11.5

\* Optimum conditions are in **boldface** type. Lower by 1-2 volts when using 75-80% Ar/balance CO<sub>2</sub>.

### Standard Diameters: \*\*

1/16", 0.045"

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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. 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.

