

## SelectAlloy 316H-AP

### Description:

**SelectAlloy 316H-AP** is a gas-shielded, flux cored, stainless steel electrode designed to weld in all positions. It has a nominal weld metal composition of 19% Cr, 12% Ni, 2.5% Mo, and a carbon content of 0.04-0.08%. The higher carbon content improves the elevated temperature strength. The presence of molybdenum improves resistance to pitting and provides increased creep resistance at elevated temperatures. **SelectAlloy 316H-AP** is designed for use with 100% carbon dioxide or a blend of 75-80% argon/balance carbon dioxide. Shielding gas mixtures with more than 75-80% Argon are not recommended.

### Classification:

- E316HT1-1, E316HT1-4 per AWS A5.22 (Also meets E316T1-1, E316T1-4 per AWS 5.22)

### Characteristics:

**SelectAlloy 316H-AP** provides superb performance characteristics in all positions, using either CO<sub>2</sub> or Argon + 20-25% 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 316H-AP** finds applications in the pulp and paper industry, chemical and textile processing equipment, furnace parts and in parts exposed to marine environments. It is used to weld type 316H stainless steel.

### Typical Mechanical Properties (CO<sub>2</sub>):\*

Ultimate Tensile Strength (psi)	84,000
Yield Strength (psi)	66,000
Percent Elongation	36

\*Strength levels will be slightly higher w/Ar+20-25% CO<sub>2</sub>

### Typical Weld Deposit Chemistry (CO<sub>2</sub>):

<u>C</u>	<u>Mn</u>	<u>Cr</u>	<u>Si</u>	<u>Ni</u>	<u>Mo</u>	<u>N</u>
0.06	1.35	18.90	0.80	11.80	2.50	0.05

Ferrite Number (WRC, 1992) - 4

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

Diameter	WFS (ipm)	Amperage	Voltage	ESO (in.)	Dep. Rate (lbs/hr)
.035"	300	110	25	5/8-3/4"	3.3
<b>.035"</b>	<b>500</b>	<b>150</b>	<b>26</b>	<b>5/8-3/4"</b>	<b>5.4</b>
<b>.035"</b>	<b>600</b>	<b>265</b>	<b>27</b>	<b>5/8-3/4"</b>	<b>6.3</b>
.035"	700	175	28	5/8-3/4"	7.7
.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 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. 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.

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