

## SelectAlloy 316L CRYO

### Description:

SelectAlloy 316L Cryo is a gas-shielded, flux cored, stainless steel electrode with a nominal weld metal composition of 19% Chromium, 12.5% Nickel, 2.5% molybdenum and a maximum carbon content of 0.04%. This wire is designed for cryogenic applications where good weld metal toughness is needed.

### Classifications & Approvals:

- E316LT0-4 per AWS A5.22

### Characteristics:

SelectAlloy 316L Cryo produces a finely rippled, even and well washed bead. The arc transfer is smooth, with minimal spatter. The slag peels freely, minimizing cleanup time.

### Applications:

Select 316L Cryo is used in the fabrication and repair of cryogenic components in applications which require weld metal toughness at liquid nitrogen temperatures (-320°F).

### Typical Mechanical Properties (75%Ar/25CO<sub>2</sub>)\*:

Ultimate Tensile Strength (psi)	82,000
Yield Strength (psi)	56,000
Percent Elongation	46
CVN (ft•lb f)@-320°F	21
Lateral Expansion @-320°F (mils)	17

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

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

Shielding Gas	C	Cr	Ni	N	Mn	Si	Mo
75Ar/25CO <sub>2</sub>	0.02	17.90	12.00	0.05	1.20	0.70	2.40

Ferrite Number (WRC, 1992) - 6

### Typical Welding Parameters:

Diameter	WFS (ipm)	Amperage	Voltage	ESO	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>165</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"	200	120	27	5/8"-3/4"	4.3
<b>.045"</b>	<b>335</b>	<b>170</b>	<b>29</b>	<b>5/8"-3/4"</b>	<b>7.1</b>
<b>.045"</b>	<b>440</b>	<b>200</b>	<b>31</b>	<b>5/8"-3/4"</b>	<b>9.3</b>
.045"	780	290	37	5/8"-3/4"	17.0
1/16"	150	150	26	3/4"-1"	5.0
<b>1/16"</b>	<b>235</b>	<b>210</b>	<b>30</b>	<b>3/4"-1"</b>	<b>7.8</b>
<b>1/16"</b>	<b>345</b>	<b>270</b>	<b>33</b>	<b>3/4"-1"</b>	<b>11.3</b>
1/16"	500	350	36	3/4"-1"	17.0

\* Optimum conditions are in boldface type. Lower by 2 volts when using Ar+20-25% CO<sub>2</sub>.  
Select-Arc all position electrodes do not contain bismuth.

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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.