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## ER316L DATA SHEET

### Pinnacle Alloys ER316L

AWS CLASS ER316L

#### CODE AND SPECIFICATION DATA:

AWS A5.9 ASME SFA 5.9; UNS S31683

#### DESCRIPTION:

Pinnacle Alloys ER316L is designed for welding low carbon, molybdenum bearing, austenitic alloys. This wire's lower carbon level increases the resistance to intergranular corrosion. Pinnacle Alloys ER316L serves as a general purpose electrode for GMAW, GTAW, and SAW welding. It offers improved corrosion and pitting resistance in marine and industrial environments.

**DIAMETERS:** .023", .030", .035", .045", 1/16", 3/32", 1/8", 5/32"

#### TYPICAL CHEMICAL COMPOSITION (Wt %):

Carbon (C)	0.02
Chromium (Cr)	19.0
Copper (Cu)	0.28
Iron (Fe)	Balance
Manganese (Mn)	1.70
Molybdenum (Mo)	2.50
Nickel (Ni)	12.5
Phosphorous (P)	0.025
Silicon (Si)	0.40

#### TYPICAL MECHANICAL PROPERTIES (as welded):

Tensile Strength (psi)	86,000 psi (593 MPa)
Yield Strength (psi)	57,000 psi (393 MPa)
Percent Elongation in 2"	36%

#### TYPICAL GMAW PARAMETERS (Spray Transfer Welding with Bare Stainless Wire):

Diameter	Type of Power	Amperage	Volts	Stickout	98% Ar/ 2% O <sub>2</sub> (cfh)
.030"	DCEP	130-200	23-27	3/8"-1/2"	35
.035"	DCEP	150-225	23-26	1/2"-3/4"	35
.045"	DCEP	200-325	24-28	1/2"-3/4"	35
1/16"	DCEP	300-350	24-27	1/2"-3/4"	35



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**TYPICAL GMAW PARAMETERS (Short-Circuiting Welding with Bare Stainless Wire):**

Diameter	Type of Power	Amperage	Volts	Stickout	90% He/ 7½% Ar/ 2½% CO <sub>2</sub> (cfh)
.030"	DCEP	50-150	14-20	3/8"-1/2"	25
.035"	DCEP	60-200	14-22	3/8"-1/2"	25
.045"	DCEP	75-225	15-23	3/8"-1/2"	25
1/16"	DCEP	100-250	16-23	3/8"-1/2"	25

**TYPICAL GTAW PARAMETERS (Welding with Stainless Cut-Lengths\*):**

Diameter	Metal Thickness	Number of Passes	Tungsten Size	Amperage	Travel Speed (in/min)
1/16"	1/16"	1	1/6"	35-60	12
3/32"	3/32"	1	1/16"	45-85	12
3/32"	1/8"	1	1/16"	55-100	12
1/8"	3/16"	1	3/32"	65-130	10

\*DCEN, Argon Shield, Tungsten Electrode

**TYPICAL SAW PARAMETERS:**

Diameter	Amperage	Volts	Flux
1/16"			Call SOWESCO
3/32"	275-350	28-33	
1/8"	350-450	29-32	
5/32"	400-550	30-33	

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

**CAUTION:** Consumers should be thoroughly familiar with the safety precautions on the warning label posted in each shipment and in the American National Standards A49.1, "Safety in Welding and Cutting," published by the American Welding Society, 550 NW LeJune Road, Miami, FL 33126: OSHA Safety and Health Standards 29 CFR 1910 is available from the U.S. Department of Labor, Washington, D.C. 20210.

Pinnacle Alloys MSDS sheet may be obtained at [www.pinnaclealloys.com](http://www.pinnaclealloys.com).