

Technical Data Sheet

316L Welding Wire and Rod



Overview

316L is similar to 316 but contains an average .02% carbon, producing a weld deposit with excellent resistance against intergranular corrosion caused by carbide precipitation. 316L is used for welding AISI types 316L, 318 and 319L that may be exposed to organic and inorganic acids. (Tri-mix gas = 90% He + 7.5% Ar + 2.5% CO₂)

Features/Benefits

- Welds most high grades of stainless up to a 316L
- Excellent corrosion resistance
- Good high-temperature resistance

Applications

- Tanks and vats
- Pumps and impellers
- Hospital equipment
- Food processing equipment
- Pharmaceutical equipment
- Shafts
- Valves

Method of Application

MIG Wire: MIG welding machine
TIG Wire: TIG welding machine

Identification

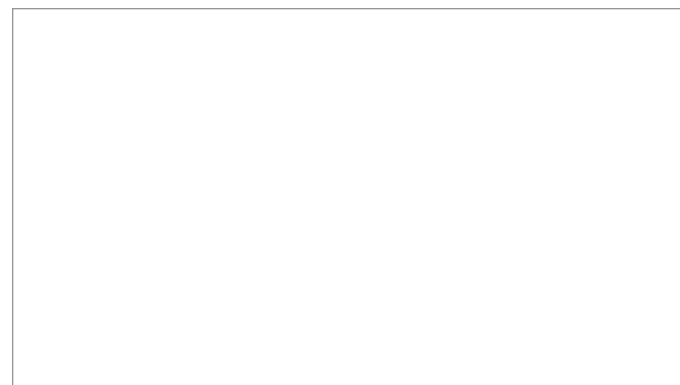
MIG: labeled wire spool
TIG: stamped/tagged wire

Directions for Use

For TIG: set machine on DC straight polarity.
For MIG: set machine on DC reverse polarity. Make sure base metal is clean of any contaminants such as grease and oil. Hold a short arc and weld with stringer beads or slight weave.

Technical Specifications

ANSI/AWS A5.9: ER316L
ASME SFA 5.9: ER316L





**Typical Weld
 Metal Properties**

Tensile Strength: 70,000 PSI minimum
 Elongation: 30% minimum

Typical GMAW Welding Procedures: DCEP Short Circuit

⁽¹⁾98% Ar, 2% O₂

	Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stickout	Tri-mix (cfh)
	0.023"	180 – 400	30 – 85	14 – 19	3/8" – 1/2"	20 – 25
	0.030"	150 – 350	45 – 125	15 – 20	3/8" – 1/2"	20 – 25
	0.035"	120 – 330	60 – 150	16 – 22	3/8" – 1/2"	20 – 30
	0.045"	100 – 280	90 – 210	17 – 22	3/8" – 1/2"	25 – 30
<i>Spray</i>	0.030"	280 – 600	160 – 220	24 – 28	3/8" – 1/2"	⁽¹⁾ 25 – 35
	0.035"	250 – 470	170 – 295	23 – 29	1/2" – 3/4"	⁽¹⁾ 25 – 35
	0.045"	200 – 385	195 – 360	24 – 30	1/2" – 3/4"	⁽¹⁾ 30 – 35
	1/16"	110 – 200	210 – 380	25 – 31	1/2" – 3/4"	⁽¹⁾ 35 – 40

Typical GTAW Welding Procedures: DCEN with EWLa-2 Truncated Conical Tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base Thickness
1/16"	1/16"	80 – 150	12	3/8"	20	1/16" – 1/8"
3/32"	3/32"	150 – 250	12	3/8"	20	1/8" – 3/16"
1/8"	1/8"	200 – 375	12	1/2"	25	1/4" – 1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.