



# 309L

**Certifications:**

AWS A5.9  
ASME SFA A5.9

## Features

- ER309L has the same qualities as ER309, but has a lower carbon content that is necessary in many chemical applications.
- Exhibits high strength and good toughness over a wide range of temperatures.

## Applications

- Used to weld similar alloys in the cast or wrought form
- ER309L is preferred over ER309 for cladding over carbon or low alloy steels.

## Diameters & Packages

Diameter	2 lb	6 lb	8 lb	10 lb	12.5 lb	25 lb	30 lb	33 lb	60 lb	36" electrode
0.023"	✓			✓		✓				
0.030"	✓			✓			✓	✓		
0.035"	✓			✓	✓	✓		✓		✓
0.045"	✓			✓		✓	✓	✓		✓
1/16"			✓	✓		✓	✓	✓	✓	✓
5/64"										✓
3/32"		✓	✓	✓						✓
1/8"		✓		✓					✓	✓
5/32"		✓		✓					✓	✓
3/16"										✓
1/4"				✓			✓			

## Mechanical Properties:

Yield Strength	Tensile Strength	Elongation
58,000 psi	87,000 psi	40%

## Technical Specifications

### Typical Chemical Composition:

Chemical	C	Cr	Ni	Mn	Si
	0.03 max	23.0-25.0	12.0-14.0	1.0-2.5	0.30-0.65

Chemical	P	S	Mo	Cu	
	0.03 max	0.03 max	0.75 max	0.75 max	

### Recommended Weld Parameters:

#### Short Arc Welding:

Diameter	Wire Feed	Amps	Volts
0.030	13-26	40-120	16-20
0.035	13-26	60-140	16-22

#### Spray Arc Welding:

Diameter	Wire Feed	Amps	Volts
0.035	20-39	140-220	24-29
0.045	16-30	160-260	25-30
1/16	10-16	230-350	27-31

#### GTAW Tig Process:

Diameter	Amps	Volts
0.035	60-90	12-15
0.045	80-110	13-16
1/16	90-130	14-16
3/32	120-175	15-20

#### Submerged Arc Welding

Diameter	Amps	Volts
3/32	250-450	28-32
1/8	300-500	29-34
5/32	400-600	30-35
3/16	500-700	30-35