



# 309L Welding Wire and Rod



**American Welding Society**

Sustaining Company Member



WASHINGTON ALLOY'S Quality  
Management System is  
Certified to ISO 9001:2008  
Cert # 05-R0925

## ALLOY DESCRIPTION AND APPLICATION;

309L is a austenitic stainless steel used to weld base metal of similar composition and 300 type stainless to carbon or low alloy steels, also the low carbon grades stainless. The low carbon reduces carbide precipitation

(Tri-mix gas = 90%He+7.5%Ar+2.5%CO<sub>2</sub>)

## TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	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 0.030</i>	<i>280-600</i>	<i>160-220</i>	<i>24-28</i>	<i>3/8-1/2"</i>	<i>(1) 25-35</i>
<i>0.035</i>	<i>250-470</i>	<i>170-295</i>	<i>23-29</i>	<i>1/2-3/4"</i>	<i>(1) 25-35</i>
<i>0.045</i>	<i>200-385</i>	<i>195-360</i>	<i>24-30</i>	<i>1/2-3/4"</i>	<i>(1) 30-35</i>
<i>1/16"</i>	<i>110-200</i>	<i>210-380</i>	<i>25-31</i>	<i>1/2-3/4"</i>	<i>(1) 35-40</i>

(1) 98%Ar  
2%O<sub>2</sub>

## TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-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.

## TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES

Carbon	0.01	Tensile Strength (psi)	87,200
Manganese	1.88	Yield Strength (psi)	58,000
Silicon	0.42	Elongation	40 %
Molybdenum	0.08		
Nickel	13.74	Phosphorus	0.020
Chromium	23.03	Sulfur	0.001
Copper	0.11	Nitrogen	0.062

**AVAILABLE SIZES:** TS 309L = Spools of 023, 030, 035, 045, 1/16, 5/64, 3/32, 1/8

TT 309L = Cut lengths of 023, 030, 035, 045, 1/16, 5/64, 3/32, 1/8, 5/32

Other sizes available – please inquire

**SPECIFICATIONS;** ANSI/AWS A5.9 ER309L  
ASME SFA 5.9 ER309L



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