

# MIG & TIG

## Oxford Alloy® 309/309L

AWS ER309/309L • Stainless Steel

### Key Features

- ❖ Reduced carbon levels (0.04% max) that offers increased resistance to inter-granular corrosion.
- ❖ Type 309/309L is ideal for joining stainless steels to themselves or to carbon or low alloy steels.
- ❖ Can be used at temperatures of up to 700°F (371°C).

### Conformances

AWS/ASME SFA 5.9  
ER309/309L  
UNS S30983



### Chemical Composition - As required per AWS 5.9

C	Cr	Ni	Mo	Mn	Si	P
0.03 max	23.0-25.0	12.0-14.0	0.75 max	1.0-2.5	0.30-0.65	0.03 max
S	Cu					
0.03 max	0.75 max					

### Mechanical Properties - As required by AWS 5.9

	Tensile Strength MPa (kst)	Yield Strength MPa (kst)	Elongation %
AWS Requirements	Not Specified		
Typical Results - As welded	590 (86)	400 (58)	40

### Typical Welding Parameters

Diameter		Process	Volt	Amps	Shielding Gas
in	(mm)				
.035	0.9	GMAW	22-23	180-210	Spray Transfer 98% Argon / 2% Oxygen
.045	1.2	GMAW	23-25	195-260	
1/16	1.6	GMAW	25-28	260-390	
.035	0.9	GMAW	19-23	55-170	Short Circuiting Transfer 90% Helium / 7 1/2 % Argon / 2 1/2 CO <sub>2</sub>
.045	1.2	GMAW	19-23	100-185	
1/16	1.6	GMAW			
1/16	1.6	GTAW	14-18	90-130	100% Argon
3/32	2.4	GTAW	15-20	120-175	100% Argon
1/8	3.2	GTAW	15-20	150-220	100% Argon

### Diameters & Packaging

Oxford Alloys USA			Oxford Alloys Asia Pacific		
Diameter (in)	Form	Packaging (lbs)	Diameter (mm)	Form	Packaging (kgs)
.035	GMAW	33 lb spool   1980 lb pallet	0.9	GMAW	15 kg spool   900 kg pallet
.045	GMAW	33 lb spool   1980 lb pallet	1.2	GMAW	15 kg spool   900 kg pallet
1/16	GMAW	33 lb spool   1980 lb pallet	1.6	GMAW	15 kg spool   900 kg pallet
1/16	GTAW	10 lb tube   40 lb carton	1.6	GTAW	5 kg tube   20 kg carton
3/32	GTAW	10 lb tube   40 lb carton	2.4	GTAW	5 kg tube   20 kg carton
1/8	GTAW	10 lb tube   40 lb carton	3.2	GTAW	5 kg tube   20 kg carton

Actual test results may vary. Refer test result disclaimer on page 160.