PRODUCT DATA SHEET

Stainless Steel Bare Wire

Weld Process: Used for Mig, Tig, & Submerged Arc

Alloy: 309LSi Class: ER309LSi

Conforms to Certification: AWS A5.9 / ASME SFA 5.9

Alloy: DM309LSI

DURAMAX
Inspiring the future generations of welders

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AWS Chemical Composition Requirements

C = 0.03 max	P = 0.03 max
Cr = 23.0 – 25.0	S = 0.03 max
Ni = 12.0 – 14.0	Mo = 0.75 max
Mn = 1.0 – 2.5	Cu = 0.75 max
Si = 0.65 – 1.00	

Deposited Chemical Composition % (Typical)

C = 0.019	P = 0.008
Cr = 23.50	S = 0.006
Si = 0.84	Ni = 12.95
Mn = 1.85	Mo = 0.15

Deposited All Weld Metal Properties

The following data is typical for mig welding with Argon + 2% oxygen and tig with Argon as shielding gas. Data on sub-arc is dependent on the type of flux used.

Mechanical Properties (R.T.)

Yield Strength	60,500psi
Tensile Strength	89,000psi
Elongation	35%
Reduction of Area	60%

Application

ER309LSI is suitable for joining stainless steels of the 304 type and 347 types. The higher silicon gives arc stability and exceptionally smooth bead appearance.

Recommended Welding Parameters

GMAW "Mig Process" Reversed Polarity

Wire Diameter	Wire Feed	Amps	Volts	Shielding Gas	Gas CFH
Short Arc Welding					
.030	13-26	40-120	16-20	Argon+2% O_2	25
.035	13-26	60-140	16-22	Argon+2% O_2	25
Spray Arc Welding					
.035	20-39	140-220	24-29	Argon+2% O_2	38
.045	16-30	160-260	25-30	Argon+2% O_2	38
1/16	10-16	230-350	27-31	Argon+2% O_2	38

GTAW "Tig Process"

Wire Diameter	Amps DCEN	Voltage	Gases
.035	60-90	12-15	Argon 100%
.045	80-110	13-16	Argon 100%
1/16	90-130	14-16	Argon 100%
3/32	120-175	15-20	Argon 100%

Note: Parameters for tig welding are dependent upon plate thickness and welding position.

Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, Cost, and Operability into consideration

Submerged Arc Welding
Reverse Polarity is suggested

Wire 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

Both Agglomerated and fused fluxes can be used for submerged arc welding.
Note: The chemical composition of the flux mainly affects the chemistry of the weld metal and consequently its corrosion resistance and Mechanical properties.