

DATA SHEET

Stainless Steel Bare Wire

Weld Process: Used for Mig, Tig, & Submerged Arc Alloy: 316LSi Class: ER316LSi Conforms to Certification: AWS A5.9 / ASME SFA 5.9 Alloy: DM316LSI



PRODUCT

DATA SHEET

AWS Chemical Composition				
C = 0.03 max	1			
Cr = 18.0 - 20.0	P = 0.03 max			
Ni = 11.0 - 14.0	S = 0.03 max			
Mo = 2.0 - 3.0	Cu = 0.75 max			
Mn = 1.0 - 2.5				

Deposited Chemical Composition % (Typical)				
C = 0.02	-	Mo = 2	.50	P = 0.010
Cr = 18.50	Mn = 1.70	S = 0.0	13	
	Ni =	= 11.50	Si =	0.90

Deposited All Weld Metal Properties

Data is typical for ER316LSI weld metal deposited by Mig using Argon + 2% oxygen and Tig using 100% Argon as the shielding gas. Data on Sub-arc is dependent on the type of flux used.

Mechanical Properties (R.T.)

Yield Strength	58,000psi
Tensile Strength	88,000psi
Elongation	37%
Reduction of Area	68%

Application

ER316LSI affords the same characteristics as 316L. The high silicon allows better arc stability along with minimal post-weld grinding. The low carbon in the weld metal gives excellent assurance against inter-granular corrosion.

Recommended Welding Parameters

GMAW "Mig Process"		Reversed Polarity			
Wire Diameter	Wire Feed	Amps	Volts	Shielding Gas	Gas CFH
Short Are	e Welding				
.030 .035	13-26 13-26	40-120 60-140	16-20 16-22	Argon+2% O ₂ Argon+2% O ₂	25 25
<u>Spray Ar</u>	c Welding				
.035 .045 1/16	20-39 16-30 10-16	140-220 160-260 230-350	24-29 25-30 27-31	Argon+2% O ₂ Argon+2% O ₂ Argon+2% O ₂	38 38 38

GTAW "Tig Process"

Wire <u>Diameter</u>	Amps <u>DCEN</u>	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	<u>Amps</u>	<u>Volts</u>	
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.