

## MIDALLOY ER316LMn BARE WIRE

### CLASSIFICATION

- AWS 5.9 Class ER316LMn / ASME SFA 5.9 Class ER316LMn
- UNS S31682/DIN 1.4455 A#9 F#6

### DESCRIPTION

- MIDALLOY ER316LMn stainless steel wire is used for GMAW, GTAW, and SAW welding.
- MIDALLOY ER316LMn bare welding wire is an austenitic stainless steel with no ferrite.

### APPLICATIONS

- Typical applications include welding, repairing and overlaying of grades of stainless steel like type 316L when weld metal ferrite is needed to be low.
- ER316LMn is used in the cryogenic industry to obtain low impact toughness and high strength. ER316LMn has been used to join Type 201,304L, 316L, as well as 3% and 9% Nickel steels. All weld metal results performed at -320°F and -452°F result in impact strengths of 25 ft-lbs and 15 mils lateral expansion.

### TYPICAL CHEMISTRY

C	Mn	Si	Cr	Ni	Mo	Cu	Cb	S	P	N
.012	.144	7.03	21.0	16.50	3.15	0.068	0.005	0.007	0.014	0.186

FN per WRC92 is 0.5 FN maximum.

### TYPICAL ALL WELD METAL MECHANICAL PROPERTIES\*

TENSILE STRENGTH	94,000 PSI
YIELD STRENGTH	63,000 PSI
ELONGATION IN 2"	30%

\* Tensile strengths in excess of 100,000 PSI have been obtained in 9% Nickel due to influence of base metal dilution.

### RECOMMENDED WELDING PARAMETERS

PROCESS	DIAMETER	VOLTAGE	AMPERAGE	GAS/FLUX*
TIG (GTAW)	1/16"	14-18	90-130	100% Ar
	3/32"	15-20	120-175	100% Ar
	1/8"	15-20	150-220	100% Ar
MIG (GMAW)	.035" SHORT ARC	16-26	70-160	69%Ar-30%He-1%O <sub>2</sub>
	.035" SPRAY ARC	26-31	150-230	92%Ar-8%Co <sub>2</sub> or
	.045" SPRAY ARC	28-32	180-280	98%Ar-2%O <sub>2</sub>
SUB ARC (SAW)	3/32"	28-30	275-350	Record IN or
	1/8"	29-32	350-450	Record IND 24

This wire has been utilized with GMAW, GTAW and SAW processes.

### STANDARD PACKAGING

- TIG 10 lb. tube / 60 lb. carton - Sizes 3/32" and 1/8"
- MIG 30 lb. spool - Size .045"
- SAW 60 lb coils - Size 3/32"

12/30/09

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