

## MIDALLOY ERCuNi (FM67) BARE WIRE

### CLASSIFICATION

- AWS 5.7 Class ERCuNi / ASME SFA 5.7 Class ERCuNi

### DESCRIPTION

- MIDALLOY ERCuNi copper-nickel alloy bare wire is used for GMAW, GTAW, and SAW welding.

### APPLICATIONS

- MIDALLOY ERCuNi is used for joining base materials such as UNS number C71500. This includes ASTM grades such as B111, B122, B151, B171, B359, B395, B432, B466, B467, B543, and B552.
- This alloy can be used for dissimilar welding applications welding various copper-nickel alloys to nickel alloys and various other copper-nickel alloys.
- MIDALLOY ERCuNi is occasionally used for overlay on carbon steel, but can only be used after applying a layer of ERNi-1 first.

### TYPICAL CHEMISTRY

Cu + Ag	Mn	Fe	Si	Ni + Co	P	Pb	Ti
68.44	.75	.48	.02	29.9	.002	PPM<100	.39

### TYPICAL MECHANICAL PROPERTIES

TENSILE STRENGTH	52,500 PSI
YIELD STRENGTH	21,000 PSI
ELONGATION	32%

### RECOMMENDED WELDING PARAMETERS

(See attached)

### STANDARD PACKAGING

- TIG 10 lb. tube / 60 lb. carton
- MIG 30 lb. spool
- SUB-ARC 60 lb. coil

10-15-2010

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TYPICAL WELDING PARAMETERS FOR NICKEL ALLOYS

**GMAW (SHORT CIRCUITING MODE)**

WIRE DIA.	AMPERAGE	VOLTAGE	WIRE SPEED, IN./MIN.	JOINT THICKNESS IN.	GAS
.035"	70-90	18-20	150-200	.050-3/16	75Ar/25He
	70-90	17-20	150-200	.050-3/16	90He/7.5Ar/2.5Co2
	70-90	17-20	150-200	.050-3/16	69Ar/30He/1Co2
.045"	75-160	19-22	175-225	1/8-3/4	75Ar/25He
	75-160	19-22	175-225	1/8-3/4	90He/7.5Ar/2.5Co2
	75-160	18-22	175-225	1/8-3/4	69Ar/30He/1Co2

**GMAW (SPRAY TRANSFER MODE)**

.045"	190-250	30-32	300-350	3/8 and UP	100Ar
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**GMAW (PULSED CURRENT MODE)**

.045" peak	120-150 250-300	18-20	175-225	1/8-3/4	75Ar/25He
peak	120-150 250-300	18-20	175-225	1/8-3/4	69Ar/30He/1Co2

**GTAW (TIG)**

JOINT THICKNESS IN.	TUNGSTEN ELECTRODE DIA. IN.	FILLER WIRE DIA. IN.	AMPERAGE	VOLTAGE	GAS
.030 to 1/16	1/16	1/16	35-60	9-12	100Ar
1/16 to 1/8	1/16 to 3/32	1/16 or 3/32	50-95	9-12	100Ar
1/8 to 1/4	3/32 or 1/8	3/32 or 1/8	75-150	10-13	100Ar
1/4 and up	3/32 or 1/8	3/32 or 1/8	95-200	10-13	100Ar

**SAW (SUBMERGED ARC)**

WIRE DIA.	AMPERAGE	VOLTAGE	
3/32"	275-350	28-30	Suitable flux
1/8"	350-450	29-32	Suitable flux

**SMAW (COATED ELECTRODES)**

DIA. & LENGTH	AMPERAGE/FLAT	AMPERAGE/ VERT. & OVERHEAD	VOLTAGE
3/32" x 12"	70-85	65-75	24-28
1/8" x 14"	85-110	80-90	26-30
5/32" x 14"	110-140	100-120	28-32
3/16" x 14"	120-160	110-130	28-32

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