

MIDALLOY ERNiCrMo-3 (FM625) BARE WIRE

CLASSIFICATION

- AWS 5.14 Class ERNiCrMo-3 / ASME SFA 5.14 Class ERNiCrMo-3

DESCRIPTION

- MIDALLOY ERNiCrMo-3 nickel alloy bare wire is used for GMAW, GTAW, and SAW welding.

APPLICATIONS

- MIDALLOY ERNiCrMo-3 is used for joining base materials such as UNS number N06625 and UNS number N08825. This includes ASTM grades such as B443, B444, B446, B564, B704, B705, B751, B163, B423, 424, and B425.
- This alloy can also be used for dissimilar welding using various nickel-chromium-molybdenum alloys and stainless steel, low alloy, and even carbon steels.
- MIDALLOY ERNiCrMo-3 is formulated with low iron (less than 1.0%), and high chromium (over 21.5%) to be an excellent choice for overlaying tubes and tube panels where low dilution of iron and high deposits of chromium are required.
- This alloy offers resistance to stress corrosion cracking, pitting, and crevice corrosion.

TYPICAL CHEMISTRY

C	Mn	Si	Fe	Mo	Cr
.02	.05	.02	.50	9.0	22.0
Ni	Cb + Ta	Ti	Al	S	P
64.5	3.5	.20	.20	.002	.005

TYPICAL MECHANICAL PROPERTIES

TENSILE STRENGTH	114,000 PSI
YIELD STRENGTH	85,000 PSI
ELONGATION	38%

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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