

## MIDALLOY ER330 BARE WIRE

### CLASSIFICATION

- AWS 5.9 Class ER330/ASME SFA 5.9 Class ER330
- UNS# NO8331 A#9 F#6

### DESCRIPTION

- MIDALLOY ER330 stainless steel wire is used for GMAW and GTAW welding.

### APPLICATIONS

- MIDALLOY ER330 stainless steel wire is used for joining stainless steels with similar compositions where heat and scale resisting properties above 1800°F (980°C) are required.
- Not recommended for high sulphur environments, which adversely affects high temperature performance.
- MIDALLOY ER330 is often used for repairs in alloy castings and wrought alloys used in furnace environments.

### TYPICAL CHEMISTRY

C	Mn	Si	Cr	Ni	Mo	S	P	N	Cu
0.20	1.47	0.60	15.5	35.0	0.05	0.001	0.014	0.022	0.05

### TYPICAL MECHANICAL PROPERTIES

TENSILE STRENGTH	84,500 PSI
YIELD STRENGTH	56,000 PSI
ELONGATION IN 2"	29%

### RECOMMENDED WELDING PARAMETERS

(See Page 2)

### STANDARD PACKAGING

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

6/24/16

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TYPICAL WELDING PARAMETERS FOR ER330 BARE WIRE

**GMAW (SHORT CIRCUITING MODE)**

WIRE DIA.	AMPERAGE	VOLTAGE	WIRE SPEED, IN./MIN.	JOINT THICKNESS IN.	GAS CHOICES
.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)**

.035"	140-190	26-30	200-275	1/8 and Up	75Ar/25He or Argon or Ar-He-1% Co2
.045"	190-250	30-32	300-350	3/8 and Up	
.062"	220-300	30-34	275-345	3/8 and Up	

**GMAW (PULSED CURRENT MODE)**

.045" peak	120-150 250-300	18-20	175-225	1/8-3/4	75Ar/25He or 100% Ar overlay
.045" peak	120-150 250-300	18-20	175-225	1/8-3/4	
					69Ar/30He/1Co2 65Ar/33He/2Co2

**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

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## General Rules for Welding 330 Stainless Steel

1. Avoid concave weld beads – be sure weld beads are convex (i.e. positive reinforcement)
2. Use low heat input- see welding parameters attached
3. No preheat required
4. Keep interpass temperature under 250 °F
5. Whenever possible design for full penetration welds
6. Fill all craters to avoid crater cracks
7. Allow bead start to “over build up” to avoid crater cracks
8. Always add filler metal with GTAW (TIG)
9. Select proper shielding gas – see attached page  
**FOR CRITICAL GMAW APPLICATION – DO NOT USE ARGON-OXYGEN OR ARGON-CO2**
10. Avoid highly restrained weld joint designs to avoid cracking due to high stress
11. Use quality filler metals Midalloy E330-16 electrodes, Midalloy ER330 bare wire.  
NOTE: Midalloy ERNiCr-3 (82) or ENiCrFe-2 (Inco A) can also be used.

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