

Oxford Alloy® 82

AWS ERNiCr-3 • Nickel Alloys



Key Features

- ❖ For welding of base materials such as ASTM B163, B166, B167 and B168 – alloys which have UNS Number N06600.
- ❖ Suitable for applications ranging from cryogenic to high temperatures making this alloy one of the most used in the nickel family.
- ❖ Also be used for dissimilar welding applications between various nickel alloys and stainless or carbon steels, as well as for overlay.

Conformances

AWS/ASME SFA 5.14
ERNiCr-3
UNS N06082

Chemical Composition - As required per AWS 5.14

Ni	C	Mn	Fe	S	Si	Cr
67.0 min	0.10 max	2.5-3.5	3.0 max	0.015 max	0.50 max	18.0-22.0
Ti	P	Nb+Ta	Cu	OET		
0.75 max	0.03 max	2.0-3.0	0.50 max	0.50 max		

Mechanical Properties - As required by AWS 5.14

	Tensile Strength MPa (ksi)	Yield Strength MPa (ksi)	Elongation %
AWS Requirements	550 (80) typical	Not Specified	Not Specified
Typical Results - As welded	460 (67)	260 (38)	28

Typical Welding Parameters					
Diameter		Process	Volt	Amps	Shielding Gas
in	(mm)				
.035	0.9	GMAW	26-29	150-190	Spray Transfer 100% Argon
.045	1.2	GMAW	28-32	180-220	
1/16	1.6	GMAW	29-33	200-250	
1/16	1.6	GTAW	14-18	90-130	100% Argon
3/32	2.4	GTAW	15-20	120-175	100% Argon
1/8	3.2	GTAW	15-20	150-220	100% Argon

Diameters & Packaging					
Oxford Alloys USA			Oxford Alloys Asia Pacific		
Diameter (in)	Form	Packaging (lbs)	Diameter (mm)	Form	Packaging (kgs)
.035	GMAW	33 lb spool 1980 lb pallet	0.9	GMAW	15 kg spool 900 kg pallet
.045	GMAW	33 lb spool 1980 lb pallet	1.2	GMAW	15 kg spool 900 kg pallet
1/16	GMAW	33 lb spool 1980 lb pallet	1.6	GMAW	15 kg spool 900 kg pallet
1/16	GTAW	10 lb tube 40 lb carton	1.6	GTAW	5 kg tube 20 kg carton
3/32	GTAW	10 lb tube 40 lb carton	2.4	GTAW	5 kg tube 20 kg carton
1/8	GTAW	10 lb tube 40 lb carton	3.2	GTAW	5 kg tube 20 kg carton

Actual test results may vary. Refer test result disclaimer on page 160.