

# Inweld Nibral, Aluminum Bronze 46

Alloy 632 UNS/CDA C63280  
 AWS A5.7 Class ERCuNiAl  
 ASME SFA 5.7 ERCuNiAl  
 MIL-E-23765/3A Type MIL-CuNiAl



## Description and Applications:

Inweld Nibral is sometimes referred to its generic name, Nickel-Aluminum-Bronze. This filler metal is used for MIG and TIG welding of cast and wrought nickel-aluminum-bronze parts where there is a requirement for high resistance to corrosion, erosion and cavitation in salt or brackish water. The most popular application of Inweld Nibral is for repair and maintenance of ship propellers. It is also used in offshore technology for such applications involving sea-water descaling planets, ship building and repair, power and chemical plant pumps and tube systems. Preheating is usually not necessary when welding with Inweld Nibral, however if preheating is done, then make sure preheat and interpass temps do not exceed 300° F (149° C). The finished weldment should be allowed to air cool to room temperature.

## Chemical Composition of Inweld Nibral, Aluminum Bronze-46 ERCuNiAl

Cu	Zn	Fe	Si	Al	Pb	Mn	Ni	Total Others
Balance	0.10	3.0-5.0	0.10	8.5-9.5	0.02	0.60-3.50	4.0-5.5	0.50

Single values are maximum unless otherwise specified.

Approximate Melting Temperature: 1930° F (1054° C)  
 Average As-Welded Brinell Hardness: 160-200  
 Tensile Strength: 72,000 psi (480 MPA)



## Recommended Welding Parameters:

	Wire Diameter	Voltage*	Amperage*
GMAW (DCRP – Electrode +)	0.035"	20-26	100-200
100% Argon or a 75 – 25%	0.045"	22-28	100-250
Argon / Helium mixture	1/16"	29-32	250-400
.	3/32"	32-34	350-500
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GTAW (DCSP – Electrode -)	1/16"	70-120	70-150
ACHF using 100% Ar or He	3/32"	120-160	140-230
2% Thoriated, 2% Ceriated or	1/8"	170-230	225-320
2% Lanthanum Tungsten Electrode	5/32"	220-280	175-300
.	3/16"	280-330	200-320

\*Use low range for iron or nickel-based alloy's, middle range for bronze alloys and high range for copper.