

# TECHALLOY 617

I. **DESCRIPTION:** Techalloy 617 is used for TIG, MIG, and SAW welding of nickel-chrome-cobalt-molybdenum alloys, as well as between themselves and dissimilar metals such as stainless, carbon or low alloy steels. This filler wire also can be used for overlay welding where similar chemical composition is desired. The weld metal provides optimum strength and oxidation resistance from 1500°F (815°C) up to 2100°F (1150°C).

II. **APPROVALS:** Manufactured under Quality System approved by ASME, ISO9001. Meets AWS 5.14 Class ERNiCrCoMo-1. Approved by Canadian Welding Bureau.

III. **CHEMICAL COMPOSITION**

Carbon	.06
Manganese	.20
Silicon	.11
Iron	.75
Chromium	21.8
Cobalt	12.45
Molybdenum	9.05
Aluminum	1.25
Tantalum	.25
Nickel	Balance
Sulfur	.001
Phosphorus	.005

**MECHANICAL PROPERTIES**

<b>Tensile Strength</b>	
112,000 PSI	770 MPA
<b>Yield Strength</b>	
88,500 PSI	610 MPA
Elongation	28%

IV. **WELDING PARAMETERS**

- a) **MIG WELDING:** Direct current; electrode +Ve  
Shielding Gas 75% Argon + 25% Helium or  
50% Argon + 50% Helium  
Gas Flow 30 to 50CFH  
Voltage 29 to 33  
Amperage 160/180 for .035" (0.9mm)  
180/220 for .045" (1.14mm)  
210/250 for .062" (1.6mm)
- b) **T.I.G. WELDING:** Direct Current; Electrode -Ve  
Shielding Gas 100% Argon  
Gas Flow 30 to 40 CFH
- c) **SUB-ARC WELDING:** Direct Current; Electrode + Ve  
Voltage 29 to 32  
Amperage 300 to 350 for 3/32" (2.5mm)  
400 to 550 for 1/8" (3.14mm)  
500 to 650 for 5/32" (4.0mm)  
Speed of Welding 20 to 30 IPM (500 to 750mm)/min.

V. **STANDARD PACKAGES:**

**MIG Wire** -30# spools; **TIG Wire** -10# Tubes; **SAW**-60# coils