UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	**TURBALOY® 250** **MC-GRADE** **GTAW SOLID BARE WELDING WIRE** **IRON BASE**	**ISSUED** JANUARY 2007 REVISION NO. A	**DATA SHEET** 6501 (3)

CROSS-REFERENCE CONFORMANCE SPECIFICATIONS

AMS 6501
MAR 250
USW 6501(V)
Maraging 250

18Ni 8Co 4.9Mo 0.4Ti 0.1Mn(VM)
UNS K 92890
MIL-S-46850 Type 3 GRADE 250
PWA736
(DRU 1615 Cobalt-free grade available)

METALLURGICAL BACKGROUND INFORMATION

TURBALOY® 250 is produced by vacuum induction melting and remelting techniques. The final wire is manufactured by special lubricant-free, roller-die forming followed by surface abrasion and cleaning processes.
These manufacturing processes ensure consistent metallurgical integrity of the alloy with regard to control of trace elements and physical purity of the welding wire surface.

TURBALOY® 250 is a Ni-Co-Mo tough martensitic, ultra high strength steel, which exhibits good toughness and ductility. TURBALOY® 250 is a suitable matching filler alloy. The alloy responds to aging in the temperature range 842°-950°F, precipitating Laves phase. Readily weldable.

MATERIALS TO BE WELDED AND APPLICATIONS

AMS 6512, 6514, 6520, 6521.
UNS K92890. PWA 734, 735.
ASTM A538.
Tool repair.
Generally preheat is not required for welding; PWHT at 842-950°F produces optimum properties.

WIRE CHEMISTRY WT%

Carbon	-	0.03	Titanium	0.30	0.50	
Manganese	-	0.10	Aluminum	0.05	0.15	
Silicon	-	0.10	Boron	-	0.003	(30ppm)
Sulphur	-	0.010	Zirconium	-	0.010	
Phosphorus	-	0.010	Oxygen	-	0.0025	(25ppm)
Nickel	17.00	19.00	Nitrogen	-	0.0050	(50ppm)
Cobalt	7.50	8.50	Hydrogen	-	0.0010	(10ppm)
Molybdenum	4.60	5.20				

WELD PROPERTIES

Melting Poin: 2650°F
Density: 8.03 gm/cc
Hardness annealed: 29 HRC
Hardness max: 49 HRC
Yield strength greater than 240 ksi can be developed.

SIZES AND FORMS AVAILABLE

STRAIGHT LENGTHS	SPOOLED WIRE
5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.	Precision layer wound, with controlled cast and helix 12" (300mm) diameter spools standard 8" (200mm), 4" (100mm) and proprietary spool sizes on request. Wide range of diameters and spool weights.

PACKAGING

Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.

DISTRIBUTED BY:

3579 HIGHWAY 50 EAST #104 □ CARSON CITY, NEVADA 89701-2826
775/883-7878 □ 800/423-5964 □ FAX: 775/883-7776