UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	**TURBALOY® 901** **MC-GRADE** **GTAW SOLID BARE WELDING WIRE** **NICKEL BASE**	**ISSUED** JANUARY 2007 REVISION NO. A	**DATA SHEET** 5830 (10)

CROSS-REFERENCE CONFORMANCE SPECIFICATIONS

MSRR 9500/227
MSRR 7013
OMAT 3/203A
AMS 5830
AMS 5660 (chemistry only)

12.5Cr 42.5Ni 6.0Mo 2.7Ti 0.015B 35Fe (VM)
UNS N09901
USWC 5830(V)
Available in HQ-GRADE

METALLURGICAL BACKGROUND INFORMATION

TURBALOY® 901 is produced by vacuum induction melting and remelting techniques. The final wire is produced 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® 901 is a high purity, nickel-base precipitation hardening alloy for welding alloys of similar composition.

(*Note:* Formerly, welding alloy 901 was issued to AMS 5660, 5830 is upgraded version.)

MATERIALS TO BE WELDED AND APPLICATION

Knife edge seal repair, turbine disc shafts and other gas turbine component fabrication.
Space rocket components.

AMS 5660, 5661.
Pure argon gas shielding and ultra clean conditions are required for optimum results.

WIRE CHEMISTRY WT%

Carbon	-	0.10	Aluminum	-	0.35	
Manganese	-	1.00	Copper	-	0.50	
Silicon	-	0.60	Lead	-	0.0005	(5ppm)
Sulfur	-	0.010	Bismuth	-	0.00003	(0.03ppm)
Phosphorus	-	0.015	Selenium	-	0.0003	(3ppm)
Chromium	11.00	14.00	Calcium	-	0.0010	(10ppm)
Nickel	40.00	45.00	Oxygen	-	0.0025	(25ppm)
Molybdenum	5.00	7.00	Nitrogen	-	0.0050	(50ppm)
Titanium	2.35	3.10	Hydrogen	-	0.0010	(10ppm)
Boron	0.010	0.020	Iron		Balance	
Cobalt	-	1.00				

WELD PROPERTIES

Precipitation hardened: HRC 32-42 Density: 8.22 gms/cc
Solution treated: HRB 91
Typical tensile strength hot finished 177ksi, 15% elongation.

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 standards 8” (200mm), 4” (100mm) and proprietary spool sizes on request. Wide range of diameters and spool weights.

PACKAGING

Sealed polyethylene envelopes. (Desiccants optional)

DISTRIBUTED BY:

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