UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	**TURBALOY® 410 MOD** **MC-GRADE** **GTAW SOLID BARE WELDING WIRE** **IRON BASE**	**ISSUED** JANUARY 2007 REVISION NO. A	**DATA SHEET** 5821 (26)

CROSS-REFERENCE CONFORMANCE SPECIFICATIONS

AMS 5821
UNS S41081
51410 MOD
USWC 5821 (V)

12Cr Ferrite Controlled Grade
Available in HQ-GRADE
(See AMS 5776 for reference)

METALLURGICAL BACKGROUND INFORMATION

TURBALOY® 410 MOD 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 ensures consistent metallurgical integrity of the alloy and surface physical purity of the welding wire is maintained.

TURBALOY® 410 MOD is a higher carbon version of AMS 5776, producing a martensitic stainless deposit. Annealing after welding will promote ductility to the weldment. The filler metal is used to weld alloys of similar composition.

MATERIALS TO BE WELDED AND APPLICATIONS

AMS 5612, 5613, 5504, 5591, 5350, 5351.
ASTM A743 Grade CA6NM, CA15M, CA-40.

Preheat base metal to 345° - 400°F and PWHT at 1202° - 1400°F.
Uses include steam tubine buckets, bucket covers, blades, compressor components in gas turbines.
Used for fabrication of catalytic converters.

WIRE CHEMISTRY WT%

Carbon	0.11	0.15	Molybdenum	-	0.20
Manganese	-	0.60	Aluminum	-	0.05
Silicon	-	0.50	Nitrogen	-	0.08
Sulfur	-	0.025	Copper	-	0.50
Phosphorus	-	0.025	Tin	-	0.05
Chromium	11.5	12.50	Iron		Balance
Nickel	-	0.75			

WELD PROPERTIES

Melting Point: 2790°F
Density: 7.7 gm/cc
Response to Heat Treat: 39-44HRC

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 e nvelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.

DISTRIBUTED BY:

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