

UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY® AF1410 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE	ISO 9001 AS 9100 Revision A	DATA SHEET 6533
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 6533 UNS K92571 USWC 6533(V) 2.0Cr 10Ni 14Co 1.0Mo (0.13 - 0.17C) VM AF1410 (Air force 14Co 10Ni)		
METALLURGICAL BACKGROUND INFORMATION	TURBALOY® AF1410 is a premium quality aircraft steel produced by vacuum induction melting and remelting techniques and 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® AF1410 is an ultra high strength Ni-Co alloy steel developed specially for military aircraft structural components. It is a competitive material to the HP9-4-20 series. TURBALOY® AF1410 filler metal produces sound welds in matching base metal. The alloy uses the Co-Ni effect to prevent austenite transformation to normal eutectoid phases.		
MATERIALS TO BE WELDED AND APPLICATIONS	TURBALOY® AF1410 and similar high alloy, high strength aircraft quality structural members which are loaded to near the proof strength - helicopter components, armor, high performance ships, shallow draft vessels, rocket motor cases, air-frame & undercarriage parts, pressure vessel, gears, dies, fasteners. Competes with titanium alloys for superior strength and economy.		
WIRE CHEMISTRY WT%	Manganese - 0.10 T Silicon - 0.10 C Sulfur - 0.005 N Phosphorus - 0.008 H P + S - 0.010 C	Oxygen - 0.0 Nitrogen - 0.0 Hydrogen - 0.1 Copper - 0.1	015 0025 (25ppm) 0015 (15ppm) 0005 (5ppm)
WELD PROPERTIES	Place welds in low stress areas, with good welding access. Use butt joints in preference to fillet joints. Use GTAW & MC-GRADE wire and ultra clean conditions. Follow procedure closely.		
SIZES AND FORMS AVAILABLE	STRAIGHT LENGTHS 5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.	SPOOLED WIRE 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.		
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