

UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY [®] 903 MC-GRADE GTAW SOLID BARE WELDING WIR IRON BASE		RE	ISO 900 AS 910 Revision	0	data sheet 5806	
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 5806 Incoloy 903 UNS N19903 42Fe 38Ni 15Co 3Cb+Ta 1.4Ti 0.92Al (VM) USWC 5806 (V)						
METALLURGICAL BACKGROUND INFORMATION	 TURBALOY[®] 903 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[®] 903 is a low expansion, high temperature, high strength nickel-cobalt-iron filler metal used to produce high quality welds in matching base metals. Large amounts have been used for space shuttle rockets and similar vessels. 						
MATERIALS TO BE WELDED AND APPLICATIONS	UNS N19903 IN 903 Stringer beads with controlled low heat input and ultra clean weldment conditions are essential for sound welds.						
WIRE CHEMISTRY WT%	Carbon Manganese Silicon Sulfur Phosphorus Chromium Nickel Molybdenum Cobalt	- - - 36.00 - 13.00	0.06 1.00 0.35 0.008 0.015 1.0 40.00 0.20 17.00	Columbium Titanium Aluminum Boron Copper Calcium Oxygen Nitrogen Iron	n 2.40 1.20 0.70 - -	0.002	0 (10ppm) 5 (25ppm) 0 (50ppm) ce
WELD PROPERTIES	Melting Range: 2400° - 2540°F					De	ensity: 8.25gm/cc
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.						
DFARS Compliant www.usweldingcorp.com							

