



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND BRIEF DESCRIPTION	8-1-1 Ti GTAW SOLID BARE WELDING WIRE TITANIUM BASE	ISSUED JANUARY 2007	DATA SHEET 4955 (5)																																				
		REVISION NO. A																																					
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 4955 8 Al 1 Mo 1 V Ti UNS R54810 USWC 4955(C)																																						
METALLURGICAL BACKGROUND INFORMATION	Alloy 8-1-1 Ti is a solid welding wire produced conventionally and then surface cleaned to remove standard drawing lubricants. 8-1-1 Ti is a near alpha, duplex, higher temperature alloy for use up to about 842° F																																						
MATERIALS TO BE WELDED APPLICATION AND ADVICE	AMS 4972, 4933, 4973, 4915, 4916. Pure argon gas shielding and ultra clean weldment conditions are required. A trailing gas shield and underside shielding is necessary..																																						
WIRE CHEMISTRY WT%	<table> <tr> <td>Aluminum</td> <td>7.35</td> <td>8.35</td> <td>Nitrogen</td> <td>-</td> <td>0.050 (500ppm)</td> </tr> <tr> <td>Molybdenum</td> <td>0.75</td> <td>1.25</td> <td>Hydrogen</td> <td>-</td> <td>0.010 (100ppm)</td> </tr> <tr> <td>Vanadium</td> <td>0.75</td> <td>1.25</td> <td>Yttrium</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Iron</td> <td>-</td> <td>0.30</td> <td>Other elements</td> <td>-</td> <td>0.10 each</td> </tr> <tr> <td>Oxygen</td> <td>-</td> <td>0.12</td> <td>Other elements</td> <td>-</td> <td>0.40 total</td> </tr> <tr> <td>Carbon</td> <td>-</td> <td>0.08</td> <td>Titanium</td> <td>-</td> <td>Balance</td> </tr> </table>			Aluminum	7.35	8.35	Nitrogen	-	0.050 (500ppm)	Molybdenum	0.75	1.25	Hydrogen	-	0.010 (100ppm)	Vanadium	0.75	1.25	Yttrium	-	0.005 (50ppm)	Iron	-	0.30	Other elements	-	0.10 each	Oxygen	-	0.12	Other elements	-	0.40 total	Carbon	-	0.08	Titanium	-	Balance
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WELD PROPERTIES	Fair weldability Bare metal hardness Rc 36 Beta transus 1900° F Density: 4.38 gr/cc																																						
SIZES AND FORMS OF SUPPLY	<table> <tr> <td> STRAIGHT LENGTHS 5 lbs. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters. </td> <td> 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. </td> </tr> </table>			STRAIGHT LENGTHS 5 lbs. (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.																																		
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PACKAGING	Sealed, air-evacuated, argon filled Vapor Barrier containers with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.																																						

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