



# UNITED STATES WELDING CORPORATION

<b>USW ALLOY DESIGNATION AND DESCRIPTION</b>	<b>6-4 Ti ELI</b>  <b>GTAW SOLID BARE WELDING WIRE TITANIUM BASE</b>	ISO 9001 AS 9100	<b>DATA SHEET 4956</b>																																				
		Revision A																																					
<b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b>	AMS 4956 UNS R56402  AWS A5.16 ERTi-23																																						
<b>METALLURGICAL BACKGROUND INFORMATION</b>	This ELI grade contains less oxygen than standard 6-4 Ti and can produce excellent fracture toughness for use in aerospace applications, surgical implants and cryogenic vessels.  6-4 Ti is a duplex, alpha-beta alloy.																																						
<b>MATERIALS TO BE WELDED AND APPLICATIONS</b>	6-4 material for critical applications - fuel tanks in rockets for example, compressor disc quality. AMS 4928, 4965, 4967, 4911 AMS 4907 AMS 4930, 4931, 4935.  Carefully controlled welding procedures are required to prevent contamination from oxygen, hydrogen, nitrogen, carbon and iron.																																						
<b>WIRE CHEMISTRY WT%</b>	<table> <tr> <td>Aluminum</td> <td>5.50</td> <td>6.75</td> <td>Nitrogen</td> <td>-</td> <td>0.012 (120ppm)</td> </tr> <tr> <td>Vanadium</td> <td>3.50</td> <td>4.50</td> <td>Hydrogen</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Iron</td> <td>-</td> <td>0.15</td> <td>Yttrium</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Oxygen</td> <td>-</td> <td>0.08</td> <td>Other elements</td> <td>-</td> <td>0.03 each</td> </tr> <tr> <td>Carbon</td> <td>-</td> <td>0.03</td> <td>Other elements</td> <td>-</td> <td>0.10 total</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Titanium</td> <td></td> <td>Balance</td> </tr> </table>			Aluminum	5.50	6.75	Nitrogen	-	0.012 (120ppm)	Vanadium	3.50	4.50	Hydrogen	-	0.005 (50ppm)	Iron	-	0.15	Yttrium	-	0.005 (50ppm)	Oxygen	-	0.08	Other elements	-	0.03 each	Carbon	-	0.03	Other elements	-	0.10 total				Titanium		Balance
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<b>WELD PROPERTIES</b>	AlphaBeta - transition: 1825°F Good weldability under controlled conditions.  Density: 9.00 gm/cc																																						
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<b>PACKAGING</b>	Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.																																						
DFARS Compliant		www.usweldingcorp.com																																					