



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY® 69 HQ-GRADE GTAW SOLID BARE WELDING WIRE NICKEL BASE		ISSUED JANUARY 2007		DATA SHEET 5778 (4)																																										
			REVISION NO. A																																												
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	MSRR 9500/209 AMS 5778 UNS N07069 FM 69 USWC 5778 (A)		72Ni 15.5Cr 1.0Cb 2.4Ti 0.70Al 7.0Fe OMAT 3/167A MIL-E-21562 Type MIL RN69 MIL-R-5031 Class 14 (Alloy X - 750)																																												
METALLURGICAL BACKGROUND INFORMATION	<p>TURBALOY® 69 undergoes a series of proprietary abrading and cleaning processes to remove all surface contaminants. These manufacturing processes ensure a consistent ultra-clean weld wire surface.</p> <p>TURBALOY® 69 is a Ni-Cr-Cb-Ti-Al precipitation hardening alloy used for welding similar composition base metal.</p>																																														
MATERIALS TO BE WELDED AND APPLICATION	<p>IN 722, IN X - 750. AMS 5747, 5542, 5582, 5583, 5598. AMS 5667, 5668, 5669. AMS 5341 ASTM B637.</p> <p>Gas turbine components - blades, vanes, bellows, brackets, turbine discs. Use argon gas shielding and ultra clean conditions for welding.</p>																																														
WIRE CHEMISTRY WT%	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.08</td> <td>Columbium</td> <td>0.70</td> <td>1.20</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>1.00</td> <td>Titanium</td> <td>2.00</td> <td>2.75</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>0.50</td> <td>Aluminum</td> <td>0.40</td> <td>1.00</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.01</td> <td>Cobalt</td> <td>-</td> <td>1.00</td> </tr> <tr> <td>Chromium</td> <td>14.00</td> <td>17.00</td> <td>Copper</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Nickel</td> <td>70.00</td> <td></td> <td>Iron</td> <td>5.00</td> <td>9.00</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Tantalum</td> <td></td> <td>0.05</td> </tr> </table>					Carbon	-	0.08	Columbium	0.70	1.20	Manganese	-	1.00	Titanium	2.00	2.75	Silicon	-	0.50	Aluminum	0.40	1.00	Sulfur	-	0.01	Cobalt	-	1.00	Chromium	14.00	17.00	Copper	-	0.50	Nickel	70.00		Iron	5.00	9.00				Tantalum		0.05
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WELD PROPERTIES	Heat treated: 30-40 HRB		Density: 8.3 gm/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 polyethylene envelopes. (Desiccants optional)																																														

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