



# UNITED STATES WELDING CORPORATION

<b>USW ALLOY DESIGNATION AND DESCRIPTION</b>	<b>TURBALOY® 41</b> HQ-GRADE GTAW SOLID BARE WELDING WIRE NICKEL BASE		<b>ISSUED</b> JANUARY 2007		<b>DATA SHEET</b>  <b>5800</b> (7)																																										
			<b>REVISION NO.</b> A																																												
<b>CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</b>	USWC 5800 (A) AMS 5800 UNS N07041		54Ni 19Cr 11Co 10Mo 3.2Ti 1.5Al 0.006B Alloy R41 Rene 41 Available in MC-GRADE																																												
<b>METALLURGICAL BACKGROUND INFORMATION</b>	<p>TURBALOY® 41 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® 41 is a Ni-Cr-Co-Mo precipitation hardening alloy used for joining similar composition base material. High temperature oxidation resistance and creep strength.</p>																																														
<b>MATERIALS TO BE WELDED AND APPLICATIONS</b>	<p>AMS 5172, 5713, 5545, 5399. GE B50 T44; T59; T94; TF75; TF110.</p> <p>Gas turbine, high temperature components, afterburner parts. Use pure argon gas shielding and ultra clean welding conditions.</p>																																														
<b>WIRE CHEMISTRY WT%</b>	<table> <tr> <td>Carbon</td> <td>-</td> <td>0.12</td> <td>Molybdenum</td> <td>9.0</td> <td>10.50</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>0.10</td> <td>Cobalt</td> <td>10.00</td> <td>12.00</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>0.50</td> <td>Titanium</td> <td>3.00</td> <td>3.30</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.015</td> <td>Aluminum</td> <td>1.40</td> <td>1.60</td> </tr> <tr> <td>Chromium</td> <td>18.00</td> <td>20.00</td> <td>Boron</td> <td>0.003</td> <td>0.010</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Iron</td> <td>-</td> <td>5.00</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Nickel</td> <td></td> <td>Balance</td> </tr> </table>					Carbon	-	0.12	Molybdenum	9.0	10.50	Manganese	-	0.10	Cobalt	10.00	12.00	Silicon	-	0.50	Titanium	3.00	3.30	Sulfur	-	0.015	Aluminum	1.40	1.60	Chromium	18.00	20.00	Boron	0.003	0.010				Iron	-	5.00				Nickel		Balance
Carbon	-	0.12	Molybdenum	9.0	10.50																																										
Manganese	-	0.10	Cobalt	10.00	12.00																																										
Silicon	-	0.50	Titanium	3.00	3.30																																										
Sulfur	-	0.015	Aluminum	1.40	1.60																																										
Chromium	18.00	20.00	Boron	0.003	0.010																																										
			Iron	-	5.00																																										
			Nickel		Balance																																										
<b>WELD PROPERTIES</b>	Soft condition: 32 HRC Aged condition: 40 HRC		Density: 8.24 gm /cc																																												
<b>SIZES AND FORMS AVAILABLE</b>	<b>STRAIGHT LENGTHS</b> 5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.		<b>SPOOLED WIRE</b> 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.																																												
<b>PACKAGING</b>	Sealed polyethylene envelopes. (Desiccants optional)																																														

DISTRIBUTED BY:

3579 HIGHWAY 50 EAST # 104 □ CARSON CITY, NEVADA 89701-2826  
775/883-7878 □ 800/423-5964 □ FAX: 775/883-7776