



UNITED STATES WELDING CORPORATION

<p align="center">USW ALLOY DESIGNATION AND DESCRIPTION</p>	<p align="center">TURBALOY[®] 909 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center">DATA SHEET 5802</p>																																										
<p align="center">CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</p>	<table border="0"> <tr> <td>AMS 5802</td> <td>USWC 5802</td> </tr> <tr> <td>GE B50T F215</td> <td>41Fe 37.5Ni 14Co 4.8Cb 1.5Ti</td> </tr> <tr> <td>UNS N19907</td> <td>Incoloy 909</td> </tr> </table>			AMS 5802	USWC 5802	GE B50T F215	41Fe 37.5Ni 14Co 4.8Cb 1.5Ti	UNS N19907	Incoloy 909																																				
AMS 5802	USWC 5802																																												
GE B50T F215	41Fe 37.5Ni 14Co 4.8Cb 1.5Ti																																												
UNS N19907	Incoloy 909																																												
<p align="center">METALLURGICAL BACKGROUND INFORMATION</p>	<p>TURBALOY[®] 909 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.</p> <p>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.</p> <p>TURBALOY[®] 909 is a Ni-Fe-Co precipitation hardening alloy producing high strength but low thermal expansion characteristics which makes it ideal for certain gas turbine and rocket components.</p> <p>TURBALOY[®] 909 is used to weld base metal of similar composition.</p>																																												
<p align="center">MATERIALS TO BE WELDED AND APPLICATIONS</p>	<p>UNS N19907. AMS 5884, 5892 IN 909.</p> <p>Largely replaces IN 903 (AMS 5806) for many welding applications.</p> <p>The MC-GRADE 909 helps minimize susceptibility to hot crack formation and in this respect is preferred to AMS 5806.</p>																																												
<p align="center">WIRE CHEMISTRY WT%</p>	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.06</td> <td>Columbium</td> <td>4.30</td> <td>5.20</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>1.00</td> <td>Titanium</td> <td>1.30</td> <td>1.80</td> </tr> <tr> <td>Silicon</td> <td>0.25</td> <td>0.50</td> <td>Chromium</td> <td>-</td> <td>1.00</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.010</td> <td>Aluminum</td> <td>-</td> <td>0.20</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.015</td> <td>Boron</td> <td>-</td> <td>0.012</td> </tr> <tr> <td>Nickel</td> <td>35.00</td> <td>40.00</td> <td>Copper</td> <td>-</td> <td>0.50</td> </tr> <tr> <td>Cobalt</td> <td>12.00</td> <td>16.00</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	-	0.06	Columbium	4.30	5.20	Manganese	-	1.00	Titanium	1.30	1.80	Silicon	0.25	0.50	Chromium	-	1.00	Sulfur	-	0.010	Aluminum	-	0.20	Phosphorus	-	0.015	Boron	-	0.012	Nickel	35.00	40.00	Copper	-	0.50	Cobalt	12.00	16.00	Iron		Balance
Carbon	-	0.06	Columbium	4.30	5.20																																								
Manganese	-	1.00	Titanium	1.30	1.80																																								
Silicon	0.25	0.50	Chromium	-	1.00																																								
Sulfur	-	0.010	Aluminum	-	0.20																																								
Phosphorus	-	0.015	Boron	-	0.012																																								
Nickel	35.00	40.00	Copper	-	0.50																																								
Cobalt	12.00	16.00	Iron		Balance																																								
<p align="center">WELD PROPERTIES</p>	<p>Melting Range: 2540° - 2600°F</p> <p align="right">Density: 8.3gm/cc</p>																																												
<p align="center">SIZES AND FORMS AVAILABLE</p>	<table border="0"> <tr> <td align="center" colspan="2">STRAIGHT LENGTHS</td> <td align="center" colspan="2">SPOOLED WIRE</td> </tr> <tr> <td>5 lb. (2.2kg) packs</td> <td></td> <td>Precision layer wound, with controlled cast and helix</td> <td></td> </tr> <tr> <td>36" (914mm) lengths</td> <td></td> <td>12" (300mm) diameter spools standard</td> <td></td> </tr> <tr> <td>Flag tagged for traceability.</td> <td></td> <td>8" (200mm), 4" (100mm) and proprietary spool sizes</td> <td></td> </tr> <tr> <td>(Double tagging and other lengths on request)</td> <td></td> <td>on request.</td> <td></td> </tr> <tr> <td>Wide range of diameters.</td> <td></td> <td>Wide range of diameters and spool weights.</td> <td></td> </tr> </table>			STRAIGHT LENGTHS		SPOOLED WIRE		5 lb. (2.2kg) packs		Precision layer wound, with controlled cast and helix		36" (914mm) lengths		12" (300mm) diameter spools standard		Flag tagged for traceability.		8" (200mm), 4" (100mm) and proprietary spool sizes		(Double tagging and other lengths on request)		on request.		Wide range of diameters.		Wide range of diameters and spool weights.																			
STRAIGHT LENGTHS		SPOOLED WIRE																																											
5 lb. (2.2kg) packs		Precision layer wound, with controlled cast and helix																																											
36" (914mm) lengths		12" (300mm) diameter spools standard																																											
Flag tagged for traceability.		8" (200mm), 4" (100mm) and proprietary spool sizes																																											
(Double tagging and other lengths on request)		on request.																																											
Wide range of diameters.		Wide range of diameters and spool weights.																																											
<p align="center">PACKAGING</p>	<p>Sealed polyethylene envelopes. (Desiccants optional)</p>																																												
<p>DFARS Compliant</p>		<p align="right">www.usweldingcorp.com</p>																																											