



UNITED STATES WELDING CORPORATION

<p align="center">USW ALLOY DESIGNATION AND DESCRIPTION</p>	<p align="center">TURBALOY® 21-6 -9 HQ-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center">DATA SHEET 5818</p>																																				
<p align="center">CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</p>	<table border="0"> <tr> <td>AMS 5818</td> <td>9.0Mn 20Cr 6.5Ni 0.27N</td> </tr> <tr> <td>Nitronic 40</td> <td>UNS S21904</td> </tr> <tr> <td>AWS A5.9 ER219</td> <td>XM-10</td> </tr> <tr> <td>USWC 5656 (A)</td> <td>XM-11</td> </tr> <tr> <td></td> <td>21-6-9</td> </tr> </table>			AMS 5818	9.0Mn 20Cr 6.5Ni 0.27N	Nitronic 40	UNS S21904	AWS A5.9 ER219	XM-10	USWC 5656 (A)	XM-11		21-6-9																										
AMS 5818	9.0Mn 20Cr 6.5Ni 0.27N																																						
Nitronic 40	UNS S21904																																						
AWS A5.9 ER219	XM-10																																						
USWC 5656 (A)	XM-11																																						
	21-6-9																																						
<p align="center">METALLURGICAL BACKGROUND INFORMATION</p>	<p>TURBALOY® 21-6-9 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® 21-6-9 is a fully austenitic, single phase, high strength, high toughness material which operates over a wide temperature range. The alloy is nitrogen strengthened. The metastable austenite can transform with heavy cold work.</p>																																						
<p align="center">MATERIALS TO BE WELDED AND APPLICATIONS</p>	<p>AMS 5594, 5562, 5561, 5656, 5595. Stainless steel to mild steels. Overlaying mild steel.</p> <p><i>Note:</i> 21-6-9 can be welded using 309, 312, Ni-base as well as AMS 5656.</p> <p>ASTM A276, A580, A666, A412. MIL-T-9821 (XM-10 grade). Avoid copper contamination to prevent cracking susceptibility.</p>																																						
<p align="center">WIRE CHEMISTRY WT%</p>	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.05</td> <td>Nickel</td> <td>5.50</td> <td>7.00</td> </tr> <tr> <td>Manganese</td> <td>8.00</td> <td>10.00</td> <td>Nitrogen</td> <td>0.10</td> <td>0.30</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>1.00</td> <td>Molybdenum</td> <td>-</td> <td>0.75</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.030</td> <td>Copper</td> <td>-</td> <td>0.75</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.030</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> <tr> <td>Chromium</td> <td>19.00</td> <td>21.50</td> <td></td> <td></td> <td></td> </tr> </table>			Carbon	-	0.05	Nickel	5.50	7.00	Manganese	8.00	10.00	Nitrogen	0.10	0.30	Silicon	-	1.00	Molybdenum	-	0.75	Phosphorus	-	0.030	Copper	-	0.75	Sulfur	-	0.030	Iron		Balance	Chromium	19.00	21.50			
Carbon	-	0.05	Nickel	5.50	7.00																																		
Manganese	8.00	10.00	Nitrogen	0.10	0.30																																		
Silicon	-	1.00	Molybdenum	-	0.75																																		
Phosphorus	-	0.030	Copper	-	0.75																																		
Sulfur	-	0.030	Iron		Balance																																		
Chromium	19.00	21.50																																					
<p align="center">WELD PROPERTIES</p>	<p>Hardness annealed: 90-95 HRB Work hardness up to: 37C HRC Readily weldable</p> <p align="right">Density: 8.0gm/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 standards</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 standards		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 standards																																					
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>																																					