



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY[®] 718 MC-GRADE GTAW SOLID BARE WELDING WIRE NICKEL BASE	ISO 9001 AS 9100 Revision A	DATA SHEET 5832																																																
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 5832 UNS N07718 USWC 5832 (V) 52.5Ni 19Cr 3.0Mo 5.1Cb 0.90Ti 0.50Al 18Fe MSRR 9500/220 MSRR 7001 Alloy 718 Available in HQ-GRADE																																																		
METALLURGICAL BACKGROUND INFORMATION	<p>TURBALOY[®] 718 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[®] 718 is a Ni-Cr corrosion and heat resistant alloy used for welding of precipitation hardenable, nickel alloys of similar composition, where oxidation resistance and creep strength are required.</p>																																																		
MATERIALS TO BE WELDED AND APPLICATIONS	SAE-AMS 5589, 5590, 5596, 5597, 5662, 5332, 5664. MSRR 7115, 7116, 7132. PWA 1009, 1016, GEB50TF15 ASTM B637, B670, IN18, INX 750. Gas turbine components manufacture and repair. Knife-edge seal repair. Rocket motor manufacture. Pure argon gas shielding and ultra clean weldment preparation required.																																																		
WIRE CHEMISTRY WT%	<table border="0"> <tr> <td>Carbon</td><td>-</td><td>0.08</td><td>Molybdenum</td><td>2.80</td><td>3.30</td></tr> <tr> <td>Manganese</td><td>-</td><td>0.35</td><td>Columbium</td><td>4.75</td><td>5.50</td></tr> <tr> <td>Silicon</td><td>-</td><td>0.35</td><td>Aluminum</td><td>0.20</td><td>0.80</td></tr> <tr> <td>Sulfur</td><td>-</td><td>0.015</td><td>Cobalt</td><td>-</td><td>1.00</td></tr> <tr> <td>Phosphorus</td><td>-</td><td>0.015</td><td>Boron</td><td>-</td><td>0.006</td></tr> <tr> <td>Chromium</td><td>17.00</td><td>21.00</td><td>Copper</td><td>-</td><td>0.30</td></tr> <tr> <td>Nickel</td><td>50.00</td><td>55.00</td><td>Iron</td><td colspan="2">Balance</td></tr> <tr> <td>Titanium</td><td>0.65</td><td>1.15</td><td></td><td></td><td></td></tr> </table>			Carbon	-	0.08	Molybdenum	2.80	3.30	Manganese	-	0.35	Columbium	4.75	5.50	Silicon	-	0.35	Aluminum	0.20	0.80	Sulfur	-	0.015	Cobalt	-	1.00	Phosphorus	-	0.015	Boron	-	0.006	Chromium	17.00	21.00	Copper	-	0.30	Nickel	50.00	55.00	Iron	Balance		Titanium	0.65	1.15			
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WELD PROPERTIES	Typical hardness of as-deposited weld bead: 40HRC Solution treated deposits: 20-25HRC Aged deposits: 36-44HRC Density: 8.19 gm/cc																																																		
SIZES AND FORMS AVAILABLE	<table border="0"> <tr> <td style="text-align: center;">STRAIGHT LENGTHS</td> <td style="text-align: center;">SPOOLED WIRE</td> </tr> <tr> <td>5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.</td> <td>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.</td> </tr> </table>			STRAIGHT LENGTHS	SPOOLED WIRE	5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.	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.																																												
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PACKAGING	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																																																	