



UNITED STATES WELDING CORPORATION

<p align="center">USW ALLOY DESIGNATION AND DESCRIPTION</p>	<p align="center">TURBALOY® 15-7 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center">DATA SHEET 5812</p>																																				
<p align="center">CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</p>	<p>AMS 5812 UNS S15789 15 - 7 Mo (VM) USWC 5812 (V) AMS 5813 (Superseded by AMS 5812)</p> <p align="right">15Cr 7.1Ni 2.4Mo 1.0Al (VM) PH 15 - 7 Mo AISI 632</p>																																						
<p align="center">METALLURGICAL BACKGROUND INFORMATION</p>	<p>TURBALOY® 15-7 (VM) is produced by vacuum induction melting and remelting techniques. The final wire is produced 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® 15-7 (VM) produces a tough austenitic structure in the as-welded condition. The alloy is a precipitation hardening, stainless material used for joining base materials of similar composition. The high purity grade produces good toughness and consistent weld properties. The aluminum content of the alloy must be protected using adequate pure argon gas shielding. The molybdenum promotes strength compared to AMS 5824.</p>																																						
<p align="center">MATERIALS TO BE WELDED AND APPLICATIONS</p>	<p>AMS 5657, 5520, UNS S15700. ASTM A564, A705, A693. PH 15 - 7 Mo (632) (17/7PH (AMS 5824) can also be used as a suitable filler metal). Various combinations of welding and PWHT can be employed depending on the required weldment properties.</p>																																						
<p align="center">WIRE CHEMISTRY WT%</p>	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.09</td> <td>Nickel</td> <td>6.50</td> <td>7.75</td> </tr> <tr> <td>Manganese</td> <td>-</td> <td>1.00</td> <td>Molybdenum</td> <td>2.00</td> <td>2.75</td> </tr> <tr> <td>Silicon</td> <td>-</td> <td>0.50</td> <td>Aluminum</td> <td>0.75</td> <td>1.25</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.010</td> <td>Oxygen</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.010</td> <td>Hydrogen</td> <td></td> <td>0.0025 (25ppm)</td> </tr> <tr> <td>Chromium</td> <td>14.00</td> <td>15.25</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>			Carbon	-	0.09	Nickel	6.50	7.75	Manganese	-	1.00	Molybdenum	2.00	2.75	Silicon	-	0.50	Aluminum	0.75	1.25	Sulfur	-	0.010	Oxygen	-	0.005 (50ppm)	Phosphorus	-	0.010	Hydrogen		0.0025 (25ppm)	Chromium	14.00	15.25	Iron		Balance
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<p align="center">WELD PROPERTIES</p>	<p>Hardness: max aged condition 46 HRC Excellent weldability.</p> <p align="right">Density: 7.8 gm/cc</p>																																						
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<p align="center">PACKAGING</p>	<p>Sealed, air-evacuated, argon purged Vapor Barrier envelopes with desiccants ensure full protection from atmospheric contamination and prolonged shelf-life.</p>																																						
<p>DFARS Compliant</p>		<p align="right">www.usweldingcorp.com</p>																																					