



UNITED STATES WELDING CORPORATION

<p align="center">USW ALLOY DESIGNATION AND DESCRIPTION</p>	<p align="center">TURBALOY[®] 702 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE</p>	<p align="center">ISO 9001 AS 9100</p>	<p align="center">DATA SHEET 1398</p>																																				
<p align="center">CROSS-REFERENCE CONFORMANCE SPECIFICATIONS</p>	<p>USW 1398 TURBALOY[®] 702 1.2Mn 0.6Si 0.2Ti 0.07Zr 0.1Al AWS A5.18 ER 70S-2</p> <p align="right">Available in HQ-GRADE</p>																																						
<p align="center">METALLURGICAL BACKGROUND INFORMATION</p>	<p>TURBALOY[®] 702 is a low carbon mild steel alloy. The final wire is manufactured by special lubricant-free, roller-die forming followed by surface abrasion and cleaning processes. 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[®] 702 is a triple deoxidized steel filler metal for producing sound welds in semi-killed and rimmed steels as well as killed steels of various carbon levels. Once package has been opened remaining wire must be protected from contamination. High purity grades are furnished bare and therefore supplied in special protective packs.</p>																																						
<p align="center">MATERIALS TO BE WELDED AND APPLICATIONS</p>	<p>Alloy originally developed for rusty and soiled surface components. Suitable for semi-automatic GMAW out of position using short-circuiting transfer because of ease of operation.</p> <p>The MC-GRADE is used in nuclear fabrication activities.</p>																																						
<p align="center">WIRE CHEMISTRY WT%</p>	<table border="0"> <tr> <td>Carbon</td> <td>-</td> <td>0.07</td> <td>Titanium</td> <td>0.05</td> <td>0.15</td> </tr> <tr> <td>Manganese</td> <td>0.90</td> <td>1.40</td> <td>Zirconium</td> <td>0.02</td> <td>0.12</td> </tr> <tr> <td>Silicon</td> <td>0.40</td> <td>0.70</td> <td>Aluminum</td> <td>0.05</td> <td>0.15</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.025</td> <td>Other elements</td> <td>-</td> <td>0.50 total (max)</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.025</td> <td>Iron</td> <td></td> <td>Balance</td> </tr> <tr> <td>Copper</td> <td>-</td> <td>0.50</td> <td></td> <td></td> <td></td> </tr> </table>			Carbon	-	0.07	Titanium	0.05	0.15	Manganese	0.90	1.40	Zirconium	0.02	0.12	Silicon	0.40	0.70	Aluminum	0.05	0.15	Sulfur	-	0.025	Other elements	-	0.50 total (max)	Phosphorus	-	0.025	Iron		Balance	Copper	-	0.50			
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<p align="center">WELD PROPERTIES</p>	<p>Minimum Yield strength, all - weld metal 60.9 ksi Minimum Tensile strength all - weld metal 79 ksi Minimum Ductility, all - weld metal 22% elongation</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>																																					