



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY[®] 4130 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE		ISO 9001 AS 9100		DATA SHEET 6457																																																
		Revision A																																																			
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 6457 UNS K13147 AISI 4130 USWC 6457 (V) 0.95Cr 0.2Mo (0.28-0.33C) MIL-R-5632 Type I Available in HQ-GRADE																																																				
METALLURGICAL BACKGROUND INFORMATION	TURBALOY [®] 4130 is produced by vacuum induction melting and re-melting techniques. 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. TURBALOY [®] 4130 is a popular high strength, low alloy steel wire used for fabricating alloys of similar composition to produce joints with good toughness, strength and reproducibility. Universal engineering alloy.																																																				
MATERIALS TO BE WELDED AND APPLICATION	AMS 6360, 6361, 6362, 6365, 6373, 6374, 6371, 6350, 6351, 6356, 6370, 6348, UNS G41300 Pre-heat and post-weld heat treatment are necessary for most applications. Defense equipment, weapon systems, highly stressed frames, F1 chassis members, tools, turbine components, aircraft parts. Wire + Arc Additive Manufacturing WAAM welding applications. Use ultra clean weldment preparation. Refer to PH & PWHT chart.																																																				
WIRE CHEMISTRY WT%	<table data-bbox="534 1231 1575 1483"> <tr> <td>Carbon</td> <td>0.28</td> <td>0.33</td> <td>Molybdenum</td> <td>0.15</td> <td>0.25</td> </tr> <tr> <td>Manganese</td> <td>0.40</td> <td>0.60</td> <td>Nickel</td> <td>-</td> <td>0.25</td> </tr> <tr> <td>Silicon</td> <td>0.15</td> <td>0.35</td> <td>Copper</td> <td>-</td> <td>0.10</td> </tr> <tr> <td>Sulfur</td> <td>-</td> <td>0.008</td> <td>Vanadium</td> <td>-</td> <td>0.06</td> </tr> <tr> <td>Phosphorus</td> <td>-</td> <td>0.008</td> <td>Oxygen</td> <td>-</td> <td>0.0025 (25ppm)</td> </tr> <tr> <td>Phosphorus + Sulfur</td> <td>-</td> <td>0.012</td> <td>Nitrogen</td> <td>-</td> <td>0.005 (50ppm)</td> </tr> <tr> <td>Chromium</td> <td>0.80</td> <td>1.10</td> <td>Hydrogen</td> <td>-</td> <td>0.0010 (10ppm)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Iron</td> <td></td> <td>Balance</td> </tr> </table>					Carbon	0.28	0.33	Molybdenum	0.15	0.25	Manganese	0.40	0.60	Nickel	-	0.25	Silicon	0.15	0.35	Copper	-	0.10	Sulfur	-	0.008	Vanadium	-	0.06	Phosphorus	-	0.008	Oxygen	-	0.0025 (25ppm)	Phosphorus + Sulfur	-	0.012	Nitrogen	-	0.005 (50ppm)	Chromium	0.80	1.10	Hydrogen	-	0.0010 (10ppm)				Iron		Balance
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WELD PROPERTIES	CVN at 0°F, 89.7ft lbs, 97% shear (Minimum specification requirement: 47.0 ft lbs.) Density: 7.8gm/cc Yield strength: 128 Ksi Tensile strength: 141 Ksi																																																				
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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																																																		

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