



UNITED STATES WELDING CORPORATION

USW ALLOY DESIGNATION AND DESCRIPTION	TURBALOY® 455 MC-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE	ISO 9001 AS 9100	DATA SHEET 5617																																											
CROSS-REFERENCE CONFORMANCE SPECIFICATIONS	AMS 5617 GRADE 2 UNS S45500																																													
METALLURGICAL BACKGROUND INFORMATION	12 Cr 8.5 Ni 2 Cu 1.1 Ti XM-16																																													
MATERIALS TO BE WELDED AND APPLICATIONS	TURBALOY® 455 wire is manufactured by special lubricant-free, roller-die forming, followed by surface abrasion and cleaning processes. These manufacturing processes ensure integrity of the alloy and surface physical purity of the welding wire. TURBALOY® 455 is a martensitic age-hardenable stainless steel. It should be considered where simplicity of heat treatment, ease of fabrication, high strength and corrosion resistance are required in combination.																																													
MATERIALS TO BE WELDED AND APPLICATIONS	AMS 5578, 5672, 5860 ASTM A313(XM-16), A564, A693, A705 MIL-S-83311 Pressure Vessels & Bottles																																													
WIRE CHEMISTRY WT%	<table style="width: 100%; border: none;"> <tr> <td>Carbon</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.010</td> <td>Nickel</td> <td style="text-align: center;">7.50</td> <td style="text-align: center;">9.50</td> </tr> <tr> <td>Manganese</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.50</td> <td>Molybdenum</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.50</td> </tr> <tr> <td>Silicon</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.20</td> <td>Columbium</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.50</td> </tr> <tr> <td>Sulfur</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.010</td> <td>Copper</td> <td style="text-align: center;">1.50</td> <td style="text-align: center;">2.50</td> </tr> <tr> <td>Phosphorus</td> <td style="text-align: center;">-</td> <td style="text-align: center;">0.010</td> <td>Titanium</td> <td style="text-align: center;">1.00</td> <td style="text-align: center;">1.35</td> </tr> <tr> <td>Chromium</td> <td style="text-align: center;">11.00</td> <td style="text-align: center;">12.50</td> <td>Nitrogen</td> <td style="text-align: center;">-</td> <td style="text-align: center;">.010</td> </tr> <tr> <td>Iron</td> <td style="text-align: center;">-</td> <td style="text-align: center;">Balance</td> <td></td> <td></td> <td></td> </tr> </table>				Carbon	-	0.010	Nickel	7.50	9.50	Manganese	-	0.50	Molybdenum	-	0.50	Silicon	-	0.20	Columbium	-	0.50	Sulfur	-	0.010	Copper	1.50	2.50	Phosphorus	-	0.010	Titanium	1.00	1.35	Chromium	11.00	12.50	Nitrogen	-	.010	Iron	-	Balance			
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WELD PROPERTIES	Hardness annealed: 31 HRC Maximum hardness: 49 HRC Excellent weldability																																													
SIZES AND FORMS AVAILABLE	<div style="flex: 1;"> <p style="text-align: center;">STRAIGHT LENGTHS</p> <p>5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters.</p> </div> <div style="flex: 1;"> <p style="text-align: center;">SPOOLED WIRE</p> <p>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.</p> </div>																																													

DFARS Compliant

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