



UNITED STATES WELDING CORPORATION

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| USW ALLOY DESIGNATION AND DESCRIPTION | TURBALOY® 17-4 PH HQ-GRADE GTAW SOLID BARE WELDING WIRE IRON BASE | | ISO 9001 AS 9100 | DATA SHEET 5825 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CROSS-REFERENCE CONFORMANCE SPECIFICATIONS | AMS 5825 UNS S17480 17-4 PH USWC 5825 (A) 16.5Cr 4.8Ni .22Cb 3.6Cu | | AWS A5.9 ER630 (formerly 327) X5 Cr Ni Cu Nb 17.4 AISI 630 Available in MC-GRADE (5803) (Note: AMS 5803 is a higher purity version). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METALLURGICAL BACKGROUND INFORMATION | <p>TURBALOY® 17-4 PH undergoes a series of proprietary abrading and cleaning processes to remove all surface contaminants. These manufacturing processes ensure a consistent ultra-clean weld wire surface.</p> <p>TURBALOY® 17-4 PH is a precipitation hardening martensitic stainless engineering alloy, used to weld similar composition materials. Modified analysis to eliminate ferrite phase.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIALS TO BE WELDED AND APPLICATIONS | ASTM A564, A705, A693. AMS 5643, 5622, 5398, 5342-44, 5604, 5529, 5528, 5568. Welds may be used as-welded, welded - aged , or solution treated - aged or depending upon required application and size of the weld. For heavy section and for high restraint, 15/5PH (AMS 5659) will give improved toughness properties. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WIRE CHEMISTRY WT% | <table border="0"> <tr> <td>Carbon</td><td>-</td><td>0.05</td><td>Nickel</td><td>4.50</td><td>5.00</td></tr> <tr> <td>Manganese</td><td>0.25</td><td>0.75</td><td>Columbium</td><td>0.15</td><td>0.30</td></tr> <tr> <td>Silicon</td><td>-</td><td>0.75</td><td>Copper</td><td>3.25</td><td>4.00</td></tr> <tr> <td>Sulfur</td><td>-</td><td>0.025</td><td>Molybdenum</td><td>-</td><td>0.75</td></tr> <tr> <td>Phosphorus</td><td>-</td><td>0.025</td><td>Iron</td><td></td><td>Balance</td></tr> <tr> <td>Chromium</td><td>16.00</td><td>16.75</td><td></td><td></td><td></td></tr> </table> | | | | Carbon | - | 0.05 | Nickel | 4.50 | 5.00 | Manganese | 0.25 | 0.75 | Columbium | 0.15 | 0.30 | Silicon | - | 0.75 | Copper | 3.25 | 4.00 | Sulfur | - | 0.025 | Molybdenum | - | 0.75 | Phosphorus | - | 0.025 | Iron | | Balance | Chromium | 16.00 | 16.75 | | | |
| Carbon | - | 0.05 | Nickel | 4.50 | 5.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Manganese | 0.25 | 0.75 | Columbium | 0.15 | 0.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Silicon | - | 0.75 | Copper | 3.25 | 4.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfur | - | 0.025 | Molybdenum | - | 0.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phosphorus | - | 0.025 | Iron | | Balance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Chromium | 16.00 | 16.75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WELD PROPERTIES | Hardness, aged at 550°C - 330HV (35R _c) Max hardness: R _c 48 Density: 7.8gm/cc | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIZES AND FORMS AVAILABLE | STRAIGHT LENGTHS 5 lb. (2.2kg) packs 36" (914mm) lengths Flag tagged for traceability. (Double tagging and other lengths on request) Wide range of diameters. | | SPOOLED WIRE 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PACKAGING | Sealed polyethylene envelopes. (Desiccants optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DFARS Compliant | | www.usweldingcorp.com | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |