



UNITED STATES WELDING CORPORATION

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|---|--|---|---|-------------------------|---------------------|---|--|------|--------|-----------|---------------|--------|--------|------------------|---------------|----------|--------|----------------|----------------|------|--------|----------|---------|-----------|--------|--|--|
| USW ALLOY DESIGNATION AND DESCRIPTION | 4043 GTAW and GMAW SOLID WELDING WIRE ALUMINUM BASE | ISSUED JANUARY 2007 | DATA SHEET 4190 (5) | | | | | | | | | | | | | | | | | | | | | | | | |
| | | REVISION NO. A | | | | | | | | | | | | | | | | | | | | | | | | | |
| CROSS-REFERENCE CONFORMANCE SPECIFICATIONS | MSRR 9500/32 AMS 4190 USWC 4190 (C) N21 (NG21) MSRR 8065 | UNS A 9 4043 OMAT 310A Fed-QQ-R-556 Class 4043 Alloy 4043 A (BS 2901 PT4) ER4043, R4043 (AWS A5.10) | | | | | | | | | | | | | | | | | | | | | | | | | |
| METALLURGICAL BACKGROUND INFORMATION | <p>ALLOY 4043 is a solid welding wire produced conventionally and then surface cleaned to remove standard metal working lubricants.</p> <p>ALLOY 4043 is an Al-5% Si alloy, <i>non-heat treatable</i>.</p> <p>ALLOY 4043 has a lower melting range than the base metals for which it is commonly used and relieves contraction during weldment cooling.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIALS TO BE WELDED AND APPLICATIONS | <p>1xxx, 3xxx, 6xxx series alloys. 2014, 2219, 5005, 5050, 5052, 7005, 7039, N21. Al-Si, Al-Si-Mg casting alloys and combinations of above materials. Al - Lithium alloys. DTD372B, LM4, LM2, LM6, LM9, LM20, LM25, LM27.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WIRE CHEMISTRY WT% | <table> <tr> <td>Silicon</td> <td>4.5 - 6.0</td> <td>Magnesium</td> <td>0.05</td> </tr> <tr> <td>Iron</td> <td>- 0.80</td> <td>Beryllium</td> <td>0.0008 (8ppm)</td> </tr> <tr> <td>Copper</td> <td>- 0.30</td> <td>Other impurities</td> <td>0.05 each max</td> </tr> <tr> <td>Titanium</td> <td>- 0.20</td> <td>Other elements</td> <td>0.15 total max</td> </tr> <tr> <td>Zinc</td> <td>- 0.10</td> <td>Aluminum</td> <td>Balance</td> </tr> <tr> <td>Manganese</td> <td>- 0.05</td> <td></td> <td></td> </tr> </table> | | | Silicon | 4.5 - 6.0 | Magnesium | 0.05 | Iron | - 0.80 | Beryllium | 0.0008 (8ppm) | Copper | - 0.30 | Other impurities | 0.05 each max | Titanium | - 0.20 | Other elements | 0.15 total max | Zinc | - 0.10 | Aluminum | Balance | Manganese | - 0.05 | | |
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| WELD PROPERTIES | <p>Melting range 1063° - 1170°F Density 2.69gm/cc</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SIZES AND FORMS AVAILABLE | <table> <tr> <td>STRAIGHT LENGTHS</td> <td>SPOOLED WIRE</td> </tr> <tr> <td>2.2 kg (5 lb) packs. 914 mm (36") lengths. Flag tagged for traceability. (Double tagging and other lengths on request). Wide range of diameters.</td> <td>Precision layer wound & with controlled cast & helix. 300 mm (12") diameter spools standard. 200 mm, 100 mm and proprietary spool sizes on request Wide range of diameters and spool weights.</td> </tr> </table> | | | STRAIGHT LENGTHS | SPOOLED WIRE | 2.2 kg (5 lb) packs. 914 mm (36") lengths. Flag tagged for traceability. (Double tagging and other lengths on request). Wide range of diameters. | Precision layer wound & with controlled cast & helix. 300 mm (12") diameter spools standard. 200 mm, 100 mm and proprietary spool sizes on request Wide range of diameters and spool weights. | | | | | | | | | | | | | | | | | | | | |
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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. | | | | | | | | | | | | | | | | | | | | | | | | | | |

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