

# AERONAUTICAL MATERIAL SPECIFICATION

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## RIVETS, STEEL, CORROSION AND HEAT RESISTANT 18Cr - 11Ni - (Cb+Ta)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. APPLICATION: Rivets requiring corrosion resistance, and heat and oxidation resistance up to approximately 1500 F, but not high strength at that temperature. Rivets should not be hand peened during riveting.

### 3. COMPOSITION:

| Check Analysis        |               |      |       |
|-----------------------|---------------|------|-------|
| Under Min or Over Max |               |      |       |
| Carbon                | 0.08 max      | --   | 0.01  |
| Manganese             | 2.00 max      | --   | 0.04  |
| Silicon               | 1.00 max      | --   | 0.05  |
| Phosphorus            | 0.040 max     | --   | 0.005 |
| Sulphur               | 0.030 max     | --   | 0.005 |
| Chromium              | 17.00 - 19.00 | 0.20 | 0.20  |
| Nickel                | 9.00 - 12.00  | 0.15 | 0.15  |
| Columbium + Tantalum  | 10xC - 1.10   | 0.05 | 0.05  |
| Molybdenum            | 0.50 max      | --   | 0.03  |
| Copper                | 0.50 max      | --   | 0.03  |

4. CONDITION: Cold headed from cold-drawn material, unless purchaser permits machining. Unless otherwise specified, rivets shall be solution heat treated free from continuous carbide network.

### 5. TECHNICAL REQUIREMENTS:

- 5.1 Hardness: Rivets shall have hardness not higher than DPH (Vickers) 150 or equivalent, when determined on a flat surface.

- 5.2 Embrittlement: Rivets shall be capable of meeting the following test:

- 5.2.1 Representative rivets, after being heated at 1200 F for 2 hr and air cooled, shall withstand immersion for 48 hr in a boiling aqueous solution containing 100 g of  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  and 100 ml of  $\text{H}_2\text{SO}_4$  (sp gr 1.84) per liter of solution under a reflux condenser, without evidence of inter-crystalline surface attack.

- 5.3 Rivets shall be capable of being driven satisfactorily with a full head free from cracks.