

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 2471

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Revised

ANODIC TREATMENT FOR ALUMINUM BASE ALLOYS Sulfuric Acid Process

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. APPLICATION: To increase corrosion resistance and provide surfaces which will ensure satisfactory adherence of paint and other organic finishes. This process is not suited for parts or assemblies which contain joints or recesses in which the anodizing solution may be retained.
3. PREPARATION: Parts to be treated shall be cleaned in such a manner as to leave the surfaces free from grease, oil, soaps, alkalies, or other contaminants. This operation may be accomplished by a hot, free-rinsing soap cleaner or by degreasing with a soluble solvent. Cleaning by a process giving a slightly etched but neutral surface is desirable.
4. SOLUTIONS:
 - 4.1 Anodizing: Shall be an aqueous solution containing 15 - 18% by weight sulfuric acid. The temperature of the anodizing solution shall be maintained at 64 - 75 F except when parts are to be dyed in which case a temperature of 75 - 85 F is permissible.
 - 4.2 Sealer: Unless otherwise specified, shall be an aqueous solution containing 5 - 6% by weight sodium or potassium dichromate. The sealer solution shall be maintained at a pH value of 4.5 - 6.0 and a temperature of 190 - 210 F. Adjustments in the acidity of the sealer solution shall be made by the addition of chromic acid.
5. PROCEDURE:
 - 5.1 The cleaned parts shall be made the anode in the anodizing solution contained in a suitable tank with lead cathodes. If the tank is lined with lead, it may serve as the cathode. Direct current shall be applied as required to produce an anode current density of 10 - 15 amp per sq ft for 15 - 30 min. as required to produce an anodic coating conforming to the specified technical requirements. Other conditions of time, temperature, and amperage may be used when approved by purchaser. After anodizing, all parts shall be rinsed thoroughly in cold running tap water.
 - 5.2 Parts shall be immersed in the sealer solution for not less than 20 minutes. After sealing, all parts shall be rinsed thoroughly in clean cold running tap water, then in clean hot water, and dried.
6. PRECAUTIONS:
 - 6.1 Surfaces to be painted shall be handled with care after anodizing to prevent rupture of the film and contamination by dirt or oil before painting, which should be performed as soon after treatment as practicable.