



AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N. Y. 10017

AMS 2473C

Superseding AMS 2473B

Issued 2-15-53

Revised 4-15-67

CHEMICAL TREATMENT FOR ALUMINUM BASE ALLOYS General Purpose Coating

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **APPLICATION:** Primarily for increasing the corrosion resistance of aluminum or aluminum base alloys and to improve adhesion of organic protective coatings and for improving the corrosion resistance and coating adhesion properties of abraded or discontinuous anodized surfaces on aluminum or aluminum alloy parts.
3. **PREPARATION:** Before parts are placed in the coating solution, they shall have chemically clean surfaces prepared with minimum erosion, pitting, or unintended abrasion. If alkaline cleaners are employed, very thorough water rinsing, preferably by spray, shall be employed after cleaning.
4. **PROCEDURE:** Consists of immersion of parts in a solution which will form a chemical coating of oxide, phosphate, silicate, or chromate for such time and at such temperatures as will produce coatings meeting the requirements of Section 5, followed by rinsing, sealing if required, and drying. If parts are not to be coated all over, the solution may be applied by brushing, swabbing, or spraying the surfaces to be coated.
 - 4.1 Only processes which permit adequate solution control by chemical analysis shall be used.
 - 4.1.1 It shall be the responsibility of the vendor of proprietary processing chemicals to supply the purchaser with methods of analysis and directions for maintenance of the solutions.
5. **TECHNICAL REQUIREMENTS:** When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.
 - 5.1 The coating shall have uniform appearance characteristic of the process used. Color of chromate coatings may range from iridescent yellow to dark olive green.
 - 5.2 For control purposes, unless otherwise agreed upon by purchaser and vendor, two samples of AMS 4037 sheet not less than 0.040 in. thick and 3 x 10 in. (the 10 in. dimension being perpendicular to the direction of rolling), one sample anodized in accordance with AMS 2470 and the other bare, shall be treated in accordance with Section 4. The samples shall then be subjected to salt spray test in accordance with ASTM B117. The panel treated only in accordance with Section 4 shall withstand 168 hr exposure to salt spray test without corroding to the extent that would cause more than 5% decrease in tensile strength and 10% decrease in elongation from that of a duplicate, similarly treated but unexposed panel. The panel anodized and then treated in accordance with Section 4 shall withstand 250 hr exposure without corroding to the extent specified above. Test results for both exposed and unexposed panels shall be reported as the average of 3 specimens from each panel. Tensile tests shall be conducted in accordance with the latest issue of AMS 2355. The foregoing test is not required when parts are subsequently to be painted.
 - 5.3 Parts that are treated by immersion and not subsequently to be painted shall be capable of withstanding the salt spray test conducted in accordance with ASTM B117 for 168 hr, without showing more than a few scattered corrosion pits visible to the unaided eye.

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against infringement of patents."