

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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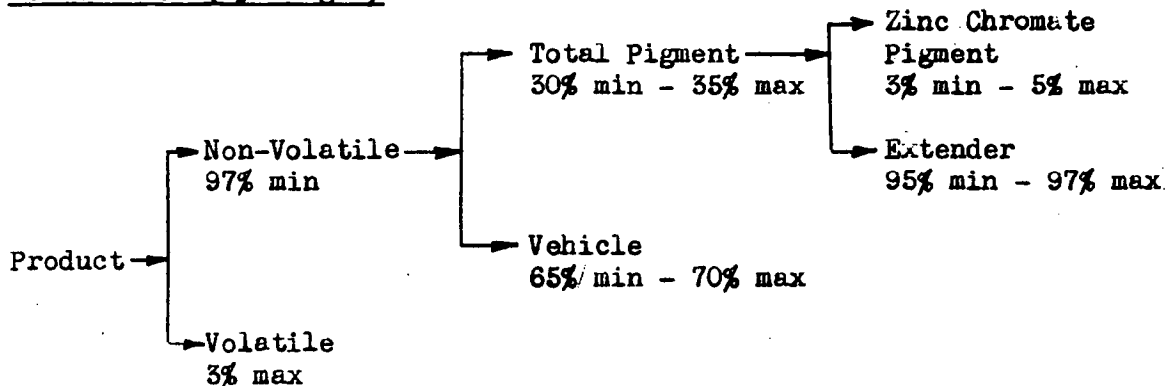
Revised

COMPOUND, ZINC CHROMATE, SEALING
(Unthinned)
Aromatic Fuel Resisting

CANCELLED

Page 1 of 3 Pages

1. ACKNOWLEDGMENT: A vendor must mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM AND USE: A compound for sealing seams in hull structures and in fuel tanks.
3. COMPOSITION (by weight):



4. MATERIAL: A non-hygroscopic, non-corrosive, permanently elastic organic plastic resin containing zinc chromate and suitable extenders, and free from any ingredients which might cause shrinkage by oxidation or evaporation. The compound shall be of uniform composition and physical properties.
5. TESTS:
 - (a) Drying Properties: A film of the compound applied to a panel, AMS 4041, shall not show appreciable hardness or embrittlement when dried for 7 days at 212°F. Loss of weight shall not exceed 3%, and the material should retain its surface tackiness.
 - (b) Water Solubility: A thin coating of the compound spread on the bottom of a crystallizing dish of 4 inch diameter shall not be noticeably affected by immersion in 200 ml. of distilled water for 48 hours at room temperature. The change in weight of the compound, determined by decanting, evaporating the water, and weighing the residue, shall be not more than 2.0%. There shall be no evidence of blistering, cracking, checking, embrittlement, softening, loss of adhesion or other defects.
 - (c) Resistance to Low and High Temperature: A 1/32 inch coating of the compound on an aluminum alloy panel, AMS 4041, shall be exposed for 5 days to a test cycle consisting of 7 hours at -70°F, and 16 hours at 212°F, and shall not then show marked hardening or embrittlement or a loss of adhesion to the metal.
 - (d) Shear Test: An assembly of two panels made as described below shall resist the linear shearing force produced by a 150 gram weight for at least 8 minutes. Two 1" by 4" AMS 4041 panels shall be submerged in 40% aromatic fuel blend (60% 100 octane aromatic free gasoline, 15% xylene, 20% toluene, 5% benzene).

While submerged, each strip shall be coated on one side for a distance of three inches from one end with approximately a 1/32 inch film. The coated surfaces shall be pressed together firmly with the uncoated portion of the panels at opposite ends of the assembly. The assembly shall be removed from the fuel and pressed together so that the film will be 1/16 inch thick, the excess compound being removed from all edges.

(e) Pressure Viscosity: The seal formed by filling a 3/4" x 1/32" orifice 3/4" deep with an excess of compound and then removing the surplus shall be ruptured by 15 ($\pm$ 0.1) pounds pressure in not less than 50 or more than 70 seconds when held at a temperature of 100°-101°F.

NOTE: This pressure viscosity figure shall be the average of 5 tests, unless the mean deviation of the reading exceeds 10% in which case 10 tests will be made.

(f) Package Stability: The material shall not lose any of its original properties when subjected to a 4 day test cycle consisting of 12 hours at 150°F, and 12 hours at 32°F. Test a 4 ounce sample of material in an 8 ounce can, and make a comparison with an untreated sample from the same batch of material.

(g) Aromatic Fuel Resistance: A coating approximately 1/16 x 1-1/2 x 1-1/2 inches applied to a panel of AMS 4041, shall show no evidence of sponging, blistering, embrittlement, loss of adhesion or other defects on a 48 hour immersion in a 40% aromatic fuel blend at room temperature. After the immersion test, the compound shall not have lost more than 2.86% of its weight as determined by weighing after 16 hours drying time at 140°F; nor have gained more than 4% in weight as determined by weighing after 30 min. drying time at room temperature. The volume of aromatic test fuel shall be adjusted so that for each square centimeter of effective surface exposed to the action of the fuel there shall be present at least 7.5 ml. of fuel.

6. CORROSION: Two 2.5 x 5 panels of AMS 4037 aluminum alloy coated for a length of 4 inches with a 1/32 inch film of the compound shall show no signs of corrosion after 7 days immersion in a vessel containing a two-layer liquid consisting of a 3.0% aqueous sodium chloride solution and a 40% aromatic fuel blend such that 1.5 inches of the panel is exposed to each layer and the balance is exposed to the air vapor mixture. Temperature to be maintained at 98°-100°F.
7. CONTAINERS: This compound shall be supplied and kept in standard I.C.C. containers in sizes as specified.
8. IDENTIFICATION: Each can or container shall bear a label giving the manufacturer's name and batch number, this specification number and name, date of manufacture, and net quantity.
9. APPROVAL: A manufacturer shall not begin to supply a product to this specification until samples have been approved by the purchaser; and after approval, the ingredients and method of manufacture shall not be changed without permission from the purchaser. Results of tests on incoming shipments shall be as good or better than those on approved samples.
10. REPORTS: The manufacturer shall supply three copies of a notarized report of the quantitative results of tests made on the batch of material from which the order was filled. This report shall include the purchase order number, material specification number, batch number, composition, quantity and date of shipment.