

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 3111

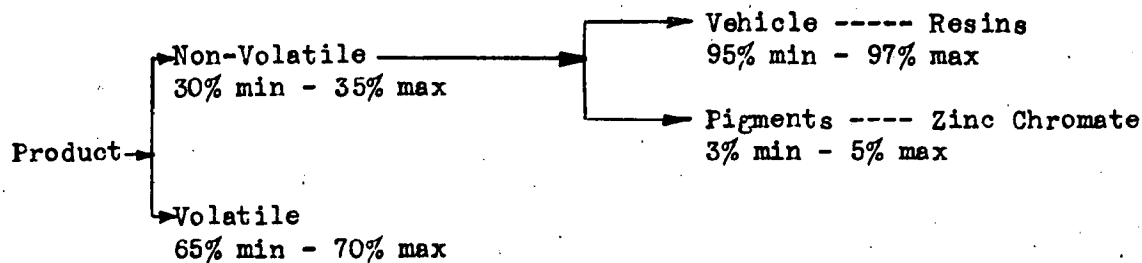
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Revised

COMPOUND, ZINC CHROMATE, SLUSHING

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1. ACKNOWLEDGMENT: A vendor must mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM AND USE: A liquid for sealing minute leaks and as a protective coating in fuel tanks and for protecting synthetic rubber tanks.
3. COMPOSITION (by weight)



4. MATERIAL: A non-hygroscopic, non-corrosive, permanently elastic compound of organic plastic resin, pigmented with zinc chromate.
5. PHYSICAL PROPERTIES: The viscosity at 77°F, shall be 1.5 poises, plus or minus 10%.
6. REQUIREMENTS: The material shall be such that the finished product may be applied by spray or brush, or by slushing inside the tank. It shall be such that it may readily be mixed to a uniform consistency free from lumps.
7. TESTS: (a) Drying Properties: A film of the compound applied to a panel, AMS 4041, by dipping, and dried at 77°(±1.8°) F, for four hours, shall not show appreciable hardness or embrittlement when dried for seven days at 212°F. Loss of weight shall not exceed 3.0%.

(b) Water Solubility: A thin coating of the compound spread on the bottom of a crystallizing dish of 4 inch diameter and dried for 4 hours at room temperature shall withstand immersion in 200 ml. of distilled water for 48 hours at room temperature and shall show a content of not more than 2.0% water soluble material determined by decanting, evaporating the water and weighing residue.

(c) Resistance to Low and High Temperature: A film of the compound applied to a panel, AMS 4041, by dipping and dried at 77°(±1.8°) F, for two hours, shall be exposed for five 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) Resistance to Liquid Hydrocarbons: A round one quart paint can with eight 0.028 inch diameter holes in the bottom and sixteen in the lower 1.5 inches of the side, sealed by filling with compound, then drained and dried at 77° (±1.8°) F, for four hours, shall show no sign of leakage over a period of three hours when tested by filling 3/4 full with a 40% aromatic fuel blend (60% 100 octane aromatic free gasoline, 15% xylene, 20% toluene, 5% benzene,) the liquid being agitated by continuous stirring.



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(e) Adhesion to Aluminum: A dip coating of the compound applied to a 1 1/2" x 1 1/2" aluminum alloy panel, AMS 4041, dried at 77° ($\pm 1.8^\circ$) F for 4 hours, shall show no evidence of blistering, softening, embrittlement, loss of adhesion or other defects after being immersed for 48 hours in a 40% aromatic fuel blend at room temperature and dried at 77° ($\pm 1.8^\circ$) F for 4 hours when compared with an untreated test specimen.

(f) Resistance to Film Formation: A coating of the compound shall form a wax-like finish and shall not show any tendency to break loose in the form of a sheet when the coating, while exposed to fuel, is ruptured and the fractured surface is rubbed with the index finger.

NOTE: This test shall be conducted on the coating tested in (d) above, after (d) is completed.

(g) Solubility in Aromatic Fuel: A dip coat of compound applied to a glass stirring rod and dried for 24 hours shall show a solubility of not more than 3.80% when rotated at 25 rpm in 40% aromatic fuel blend for a period of 24 hours.

(h) Package Stability: The material shall not lose any of its original properties when subjected to a four-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.

8. 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 and air dried for two hours, shall show no signs of corrosion after seven 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 shall be maintained at 98-100°F.
9. CONTAINERS: This compound shall be supplied and kept in standard I.C.C. containers, in sizes as specified.
10. 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.
11. 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.
12. 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.
13. REJECTIONS: Material not conforming to this specification, or modifications specified on the purchase order, is subject to rejection. If samples for verification are desired by the vendor they must be claimed within three weeks. Rejected material will be held a reasonable time at vendor's risk, awaiting shipping instructions for the return of the same for credit or replacement as specified. Vendor shall pay all transportation charges.

NOTE. SIMILAR SPECIFICATION: Army Air Forces 3595; is listed for information only and shall not be construed as an acceptable alternate unless all requirements of this AMS are met.