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AEROSPACE
MATERIAL
SPECIFICATION**AMS** 3076BIssued 9-30-66
Revised 4-1-85

COMPOUND, CORROSION-PREVENTIVE, HARD FILM, COLD APPLICATION

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 4-21-83. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the "B" revision of the subject specification.

REAFFIRMED

APR 1991

REAFFIRMED

JUL 1991

This specification is under the jurisdiction of AMS Committee "B".

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AEROSPACE MATERIAL -SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

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

AMS 30768

Superseding AMS 3076A

 Issued 2-2-64
 Revised 9-30-66

COMPOUND CORROSION-PREVENTIVE Hard Film, Cold Application

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. TYPE: A ready-mixed compound, consisting of essentially equal parts of a stable, nonvolatile, petroleum-base compound and AMS 3160 petroleum solvent, suitable for application by dipping, brushing or spraying at 70 F (21 C) and higher.
3. APPLICATION: Primarily for preservation, during extended periods of shipment and/or storage, of miscellaneous metal parts, tools, subassemblies, and equipment where the compound is readily accessible for removal and removal does not damage the parts.
4. 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**.
 - 4.1 Abrasiveness: Compound shall not contain **abrasive** substances.
 - 4.2 Toxicity: Compound shall contain no materials of known toxicity. The vapor shall not cause discomfort or injury to workmen engaged in application of the compound.
 - 4.3 Coverage: Compound shall provide a continuous, completely protective film on metal parts under normal conditions of storage in all climates.
 - 4.4 Setting: Compound as applied to metal parts shall set to a firm, hard film in 24 hr at room temperature (77 F $\pm$ 7 (25 C $\pm$ 3.9) and, after 120 hr standing, shall not have checked or cracked so as to expose the **metal** surface underneath.
 - 4.5 Removability: Compound shall be readily removed by dipping in, or spraying with, AMS 3160 petroleum solvent or by wiping with cloths saturated with the solvent.
 - 4.6 Corrosion: Compound shall not corrode polished steel, copper, magnesium, aluminum, or cadmium plate when maintained in contact with those metals for 4 **hr** at 210 F $\pm$ 2 (98.9 C $\pm$ 1.1).
 - 4.7 Flash Point: Compound shall have a flash point not lower than 100 F (37.8 C) when determined in accordance with ASTM D56.
 - 4.8 Percentage of Nonvolatile Matter: Compound shall contain not less than **50%** by weight nonvolatile matter when determined as follows:
 - 4.8.1 Ten g of compound shall be weighed to the nearest mg into a tared evaporating dish and the dish and contents heated for 24 **hr** in an oven at 211 - 230 F (105 - 110 C). After heating, the dish shall be cooled to room temperature and reweighed, and the nonvolatile matter calculated from the residual weight.
 - 4.9 Properties of Nonvolatile Matter: Nonvolatile matter (either that portion remaining from mixed compound after complete evaporation of the solvent or the original base compound from which the mixed compound was made) shall conform to the following requirements:

4.9.1 Melting Point, **min** 150 F (65.5 C) ASTM **D127**

4.9.2 Consistency, **max** 90 ASTM **D217**

4.9.3 Lead Solubility: Nonvolatile matter shall not cause a change in weight of a lead specimen of more than 5 **mg** per sq in. when tested as follows:

4.9.3.1 Fifty g $\pm$ 1.0 of nonvolatile matter shall be weighed into a suitable dish and the dish and nonvolatile matter heated to 205 $\pm$ 210 F (96.1 $\pm$ 98.9 C). A 1 $\times$ 1 $\times$ 1/16 in. polished specimen of lead sheet shall be accurately weighed and immersed for 4 hr in the nonvolatile matter maintained at 205 $\pm$ 210 (96.1 $\pm$ 98.9 C). Specimen **shall** be removed, cleaned **with** solvent, and reweighed. Change in weight per square inch shall be calculated from the change in weight and the total area of the specimen.

4.10 Loss on Heating: Compound shall not lose more than 5.0% in weight when tested as follows:

4.10.1 Two 2 x 4 x 1/16 in. polished and alkaline-cleaned panels of AMS 5042 steel sheet, or equivalent, shall be weighed to the nearest milligram. Panels shall be dipped in compound at 82 F $\pm$ 3 (27.8 C $\pm$ 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F $\pm$ 7 (25 C $\pm$ 3.9) for 24 hours. Panels shall be weighed to **determine** the weight of the coating and then suspended for 4 hr in an oven at 135 F $\pm$ 1 (57.2 C $\pm$ 0.6). After heating, panels shall be carefully removed from the oven, allowed to cool to room temperature, and reweighed. The percentage loss shall be calculated from the loss in weight and the original weight of coating.

4.11 Stability: Compound shall remain homogeneous with age and when tested as follows:

4.11.1 A sample of compound shall be placed in a test tube, heated to 100 F $\pm$ 2 (37.8 C $\pm$ LO), and maintained at that temperature for 1 hour. Tube and compound shall be cooled to room temperature and held for 1 hr, then further cooled to -40 F $\pm$ 2 (-40 C $\pm$ 1.1) and maintained at that temperature for 1 hour. Compound, after returning to room temperature, shall be examined for homogeneity.

4.12 Wetting Properties and Low Temperature Adhesion: Compound shall thoroughly wet the surface of test panels, shall form a smooth, **unbroken** film, and shall evince satisfactory adhesion when tested as follows :

4.12.1 **Two** 2 x 4 **x** 1/16 in. polished and alkaline-cleaned panels of AMS 5042 steel sheet, or equivalent, shall be dipped in compound at 82 F $\pm$ 3 (27.8 C $\pm$ 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F $\pm$ 7 (25 C $\pm$ 3.9) for 24 hours. Panels shall be cooled to 0 F $\pm$ 2 (-17.8 C $\pm$ 1.1) and maintained at that temperature for 1 hour. While at 0 F $\pm$ 2 (-17.8 C $\pm$ 1.1), 4 parallel scratches about 1/8 in. apart and 1 in. long shall be made in the compound film with a pointed knife blade; 4 similar scratches which intersect the first four at right angles shall also be made. There shall be no flaking of the film within the area bounded by the scratches.

4.13 Humidity Protection: Compound shall protect metal panels from corrosion and pitting for 28 days when exposed to humid atmosphere as follows:

4.13.1 Test panels 2 x 4 x 1/16 in. shall be prepared. There shall be 2 freshly sandblasted panels and 2 polished and alkaline-cleaned panels of AMS 5042 steel sheet, or equivalent, and 2 polished panels of AMS 4037 aluminum alloy sheet. All panels shall be dipped in compound at 82 F $\pm$ 3 (27.8 $\pm$ 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F $\pm$ 7 (25 C $\pm$ 3.9) for 24 hours.