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400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3076C

Issued	FEB 1949
Revised	SEP 1966
Noncurrent	APR 1983
Cancelled	DEC 2000

Superseding AMS 3076B

Compound, Corrosion-Preventive Hard Film, Cold Application

CANCELLATION NOTICE

This specification has been "CANCELLED" by the Aerospace Materials Division, SAE, as of December 2000. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications.

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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 ± 7 (25 C ± 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 ± 2 (98.9 C ± 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 ± 1.0 of nonvolatile matter shall be weighed into a suitable dish and the dish and nonvolatile matter heated to 205 - 210 F (96.1 - 98.9 C). A 1 x 1 x 1/16 in. polished specimen of lead sheet shall be accurately weighed and immersed for 4 hr in the nonvolatile matter maintained at 205 - 210 F (96.1 - 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 ± 3 (27.8 C ± 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F ± 7 (25 C ± 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 ± 1 (57.2 C ± 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 ± 2 (37.8 C ± 1.0), 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 ± 2 (-40 C ± 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 ± 3 (27.8 C ± 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F ± 7 (25 C ± 3.9) for 24 hours. Panels shall be cooled to 0 F ± 2 (-17.8 C ± 1.1) and maintained at that temperature for 1 hour. While at 0 F ± 2 (-17.8 C ± 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 ± 3 (27.8 ± 1.7), withdrawn, and suspended vertically in an atmosphere of not more than 60% relative humidity at a temperature of 77 F ± 7 (25 C ± 3.9) for 24 hours.

4.13.2 After conditioning as in 4.13.1, all panels shall be suspended vertically in humid atmosphere for 28 days in accordance with ASTM D1748. Upon completion of the exposure, panels shall be removed from the cabinet, cleaned with solvent, and examined. Visible corrosion or pitting of any surface shall be cause for rejection of the compound. If corrosion occurs, but to no greater extent than 3 spots no larger than 1 mm in diameter, the compound may be retested. If on, retesting, no corrosion spots occur, the compound shall be acceptable. In any case, corrosion within 1/8 in. of an edge shall be disregarded.