AEROSPACE
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 3072C
Superseding AMS 3072B
Issued 3-1-42
Revised 11-1-67

COMPOUND, CORROSION PREVENTIVE
Aircraft Engine

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Preservation of metal parts of aircraft engines during shipment and/or storage and for lubrication of the engine while operating during preservation in accordance with AMS 2570.

3. MATERIAL: Shall be a blend of one volume of AMS 3071 Concentrate and three volumes of aircraft engine lubricating oil conforming to the latest issue of MIL-L-6082, Grade 1120.

4. TECHNICAL REQUIREMENTS: Compound shall conform to the following requirements; tests shall be performed in accordance with the issue of specified ASTM methods listed in the latest issue of AMS 2350.

4.1 Properties:

Viscosity, Saybolt Universal at 210 F (98.9 C), sec	100 - 125	ASTM D88 or D445
Viscosity Index, min	95	ASTM D567
Flash Point, min	350 F (176.7 C)	ASTM D92
Pour Point, max	20 F (-6.7 C)	ASTM D97
Carbon Residue, %, max	2.5	ASTM D189
Precipitation Number, max	0.1	ASTM D91
Ash (20 g sample), %, max	1.0	ASTM D482
Volatile Matter, % by weight, max	3.0	4.1.1
Corrosion, Copper Strip	No discoloration or pitting	4.1.2
Humidity Protection, hr, min	150	4.1.3
Hydrobromic Acid Neutralization, hr, min	24	4.1.4

4.1.1 Volatile Matter: Approximately 10 g of compound shall be weighed, to the nearest 0.1 g, into a tared dish measuring about 2-3/4 in. in diameter by about 3/4 in. deep. The dish shall be placed in an oven maintained at 221 F ± 2 (105 C ± 1.1) for 24 hours. After heating, the dish shall be re-weighed and the volatile matter calculated.

4.1.2 Corrosion: Shall be determined in accordance with ASTM D130 except that a temperature of 212 F ± 2 (100 C ± 1.1) shall be used in place of 122 F (50 C).

4.1.3 Humidity Protection: Two 2 x 4 in. freshly sand blasted panels of low carbon steel, AMS 5042 or equivalent, shall be dipped in the compound so as to submerge completely all surfaces and shall then be suspended vertically in an atmosphere maintained at 77 F ± 5 (25 C ± 2.8) and 50 - 55% relative humidity for 4 hours. At the end of this period, the panels shall be suspended vertically in a humidity cabinet operating at a temperature of 120 F ± 2 (48.9 C ± 1.1) and a relative humidity of 97 - 100%. Cleaned, humidified air shall flow over the panels at a rate of 8 ± 1 linear ft per hour. Upon completion of the specified time, the panels shall be removed from the cabinet, cleaned with naphtha, and examined. Visible corrosion of any surface, except within 1/8 in. from any edge, shall be cause for rejection of the compound. If no more than three rust spots no larger than 1 mm in diameter occur, the compound shall be retested. If, on retesting, no rust spots occur, the compound shall be acceptable.

4.1.4 Hydrobromic Acid Neutralization: Two 2 x 4 in. freshly sand blasted panels of low carbon steel, AMS 5024 or equivalent, shall be dipped in a 10% emulsion of 0.2% hydrobromic acid solution in aircraft engine lubricating oil and slushed vigorously for 1 minute. The panels shall be removed and allowed to drain for 1 minute. Each panel shall then be dipped in the corrosion preventive compound ten times per minute for 1 min. in such a manner that the panel is immersed completely each time. They shall then be suspended vertically in an atmosphere maintained at 77 F ± 5 (25 C ± 2.8) and 50 - 55% relative humidity for 4 hours. After draining, the panels shall be hung vertically in the humidity cabinet specified in 4.1.3 for 24 hours. At the end of the period, the panels shall be cleaned with naphtha and examined for corrosion. Visible corrosion on any surface, except within 1/8 in. from any edge shall be cause for rejection of the compound.

4.2 Homogeneity: Compound shall show no separation when heated at 210 F ± 2 (98.9 C ± 1.1) for 24 hours.

4.3 Toxicity: Compound shall contain no materials of known toxicity. The vapor shall not cause discomfort or injury to workmen engaged in application of the material.

4.4 Application and Removability: Compound shall form a continuous, completely protective film on metals by any method of application and shall be readily removed by spraying with AMS 3160 petroleum solvent or by wiping with cloths saturated with the solvent.

4.5 Effect on Color-Indicating Properties of Cobalt Chloride-Impregnated Silica Gel: Compound shall show no adverse effect on the property of cobalt chloride-impregnated silica gel to indicate the degree of saturation and equivalent relative humidity, when tested as follows:

4.5.1 Five g of dehydrating agent conforming to AMS 3420, Grade D, shall be placed in each of two opposite tubes of a centrifuge. One tube shall be filled with the compound under test and the other tube filled with aircraft engine lubricating oil so that the dehydrating agent is completely covered in each tube. Immediately before starting the centrifuge, the temperature of the material in each tube shall be 110 F ± 5 (43.3 C ± 5 (43.3 C ± 2.8). The centrifuge shall be operated at a minimum speed of 1800 rpm for 5 minutes. The centrifuge shall then be stopped, the tubes removed, and as much of the oil as possible shall be poured from each tube without spilling the dehydrating agent. The tubes shall then be filled with distilled water and centrifuged as previously. At the end of 5 min., the centrifuge shall be stopped and the colors of the saturated dehydrating agents shall be compared without removing from the tubes. Differences in color, not attributable to reproducibility of this test for dehydrating agent tested with lubricating oil, shall be cause for rejection of the compound.

5. REPORTS: Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the quantitative results of tests made on the batch of compound from which the order was filled to determine conformance to the requirements of this specification. This report shall include the purchase order number, material specification number, vendor's identification, batch number, quantity, and date of shipment.

6. IDENTIFICATION: All containers shall be plainly marked to show the material specification number, purchase order number, quantity, batch number, and vendor's identification.

7. PACKAGING: Unless otherwise specified, compound shall be packaged in either 5 gal cans or 55 gal drums, as ordered.