



# AEROSPACE MATERIAL SPECIFICATION

**AMS3066™****REV. C**

Issued 1976-03  
Revised 2001-03  
Reaffirmed 2021-08

Superseding AMS3066B

Compound, Corrosion-Inhibiting  
Water-Displacing, Soft Film, Aerosol Canned

## RATIONALE

AMS3066C has been reaffirmed to comply with the SAE five-year review policy.

### 1. SCOPE:

#### 1.1 Form:

This specification covers a solvent-dispersed, corrosion-inhibiting compound packaged in aerosol cans.

#### 1.2 Application:

This product has been used typically for protection of bare or phosphate-treated steel surfaces where more protective coatings are not functionally desirable, where reapplication in service is feasible, and where water or saline solutions must be displaced from corrodible surfaces to prevent or arrest corrosion, but usage is not limited to such applications.

##### 1.2.1 This product will provide protection for extended periods of storage when coated surfaces are packaged with suitable barrier materials.

#### 1.3 Safety - Hazardous Materials:

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

### 2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been canceled and no superseding document has been specified, the last published issue of that document shall apply.

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Documents

Document Sharing Hub

## 2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2820     Aerosol Packaging

## 2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 117     Operating Salt Spray (Fog) Testing

ASTM D 86     Distillation of Petroleum Products

ASTM D 874     Sulfated Ash from Lubricating Oils and Additives

ASTM D 1310   Flash Point and Fire Points of Liquids by Tag Open-Cup Apparatus

ASTM D 1748   Rust Protection by Metal Preservatives in the Humidity Cabinet

## 2.3 U.S. Government Publications:

Code of Federal Regulations: Available from Superintendent of Documents, Government Printing Office, Washington, DC 20402.

16 CFR 1500.130   Commercial Practices, Consumer Product Safety - Self-Pressurization of Containers; Labeling

49 CFR 173-300     Transportation - Hazardous Materials Regulations of the Department of Transportation (DoT)

## 3. TECHNICAL REQUIREMENTS:

### 3.1 Material:

The corrosion-inhibiting compound shall be composed of a nonvolatile base compound dispersed in a solvent to form a fluid formulation and packaged in aerosol cans.

3.1.1 Compound Composition: Shall be optional with the manufacturer.

3.1.2 Solvent Composition: Shall be optional with the manufacturer, except that no aromatic or halogenated solvents shall be used in the formulation. The distillation end point of the solvent, determined in accordance with ASTM D 86, shall be not higher than 210 °C (410 °F). No solvent shall be used that has a threshold limit value (TLV) (see 8.2) for toxic materials of less than 350 ppm.

3.1.3 Propellant Composition: Shall be optional with the manufacturer, except for the following limitations:

3.1.3.1 The propellant shall be a nonflammable type in accordance with Code of Federal Regulations 49 CFR 173.300.

3.1.3.2 No propellant shall be used for which the TLV for toxic materials is less than 350 ppm. (See 8.2.)

### 3.2 Properties:

The product shall conform to the following requirements; tests shall be performed on the product supplied and in accordance with specified test procedures:

#### 3.2.1 Compound Properties:

3.2.1.1 Nonvolatile Content: Shall be 95 to 110% of the value established on the initial sample, determined in accordance with 4.5.1.1.

3.2.1.2 Sulfated Residue: Shall be within 0.05 of the value determined on the initial sample when that value is 0 to 0.50% and within 10% of the value determined on the initial sample when that value is over 0.50%. Determination shall be made in accordance with ASTM D 874.

3.2.1.3 Flash Point: Shall be not lower than 65 °C (149 °F), determined in accordance with 4.5.1.2.

3.2.1.4 Abrasives: Shall be absent, determined in accordance with 4.5.1.3.

3.2.1.5 Stability: The compound shall be stable and homogeneous and shall recover from exposure to temperature extremes of -40 to +53 °C (-40 to +127 °F), determined in accordance with 4.5.1.4.

#### 3.2.2 Application Properties:

3.2.2.1 Wetability and Film Continuity: The compound shall readily wet surfaces and, upon evaporation of the solvent, the resultant coating shall be continuous, determined in accordance with 4.5.2.1.

3.2.2.2 Drying: The compound film shall remain soft on drying and exposure, determined in accordance with 4.5.2.2.

#### 3.2.3 Film Properties:

3.2.3.1 Discernibility: The compound shall be visually discernible for not less than 14 days on a surface to which it has been applied and allowed to stand in a well-lighted and ventilated room. The color of the finished compound shall be black or brown. An oil-soluble dye may be used.

3.2.3.2 Water Displacement: The compound shall satisfactorily displace water from a metal surface, determined in accordance with 4.5.3.1.

3.2.3.3 Protection of Metals: The compound shall produce no visual evidence of pitting or etching, or a weight change in excess of values shown in Table 1, determined in accordance with 4.5.3.2. In addition, specimens tested in dry heat shall show no dark discoloration.

TABLE 1 - Allowable Weight Change

| Metal                  | Weight Change                      |
|------------------------|------------------------------------|
|                        | mg/cm <sup>2</sup> of Surface Area |
| Brass, leaded          | 1.0                                |
| Cadmium anode          | 5.0                                |
| Zinc anode             | 7.5                                |
| Magnesium alloy, AZ31B | 0.5                                |
| Aluminum alloy, 2024   | 0.2                                |
| Steel, AISI 1010       | 0.2                                |

3.2.3.4 Humidity Resistance: The compound shall protect test specimens exposure to humidity for not less than 30 days, determined in accordance with 4.5.3.3.

3.2.3.5 Salt Spray Protection: The compound shall protect test panels from corrosion and pitting for not less than seven days, determined in accordance with 4.5.3.4.

### 3.3 Aerosol Spray Cans:

Shall conform to AMS 2820.

3.3.1 Leakage: The pressurized cans shall not leak or become distorted when tested in accordance with 4.5.4.1.

3.3.2 Fill: Pressurized cans containing the compound shall have a compound net weight as specified, determined in accordance with 4.5.4.2. The complete, usable portion of the contents shall be expelled before the propellant is expended.

### 3.3.3 Sprayability:

3.3.3.1 Spray Pattern: All aerosol pressure cans shall be equipped with a spray nozzle. The nozzle shall provide a fine, steady spray and shall deposit the compound evenly on a flat or vertical surface when sprayed as specified in 4.5.4.3.1. No chunks of thickened or solid compound shall be expelled and no clogging of the nozzle shall occur. After clearing the nozzle in accordance with manufacturer's instructions, there shall be no perceptible leakage.

3.3.3.2 Adherence, Buildup, and Sag: The compound shall adhere to the specimen surface and shall not excessively foam or sag upon application of repeated layers in accordance with 4.5.4.3.2.

3.3.3.3 Discharge Rate at 4 °C (39 °F): The discharge rate of compound from a full, pressurized can shall be not less than 1.0 gram per second at 4 °C ± 1 (39 °F ± 2), determined in accordance with 4.5.4.3.3.

- 3.3.3.4 Discharge Rate After Temperature Cycling: The compound shall be readily sprayable, shall meet the discharge rate of 3.3.3.3, and shall produce a uniform, continuous film after subjecting a full, pressurized can to temperature cycling between -40 and +53 °C (-40 and +127 °F) in accordance with 4.5.4.3.4.

#### 3.4 Quality:

The compound, as received by purchaser, shall be homogeneous and free from water, chlorides, and other impurities detrimental to usage of the compound. The compound shall not be injurious in any way to personnel if reasonable procedures and safety precautions are used.

### 4. QUALITY ASSURANCE PROVISIONS::

#### 4.1 Responsibility for Inspection:

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

#### 4.2 Classification of Tests:

- 4.2.1 Acceptance Tests: Tests for requirements shown in Table 2 are acceptance tests and shall be performed on each lot.

TABLE 2 - Acceptance Tests

| Test                        | Requirement Paragraph |
|-----------------------------|-----------------------|
| Sulfated Residue            | 3.2.1.2               |
| Abrasives                   | 3.2.1.4               |
| Drying                      | 3.2.2.2               |
| Discernibility              | 3.2.3.1               |
| Leakage                     | 3.3.1                 |
| Fill                        | 3.3.2                 |
| Spray Pattern               | 3.3.3.1               |
| Adherence, Buildup, and Sag | 3.3.3.2               |

- 4.2.2 Periodic Tests: Tests for requirements shown in Table 3 are periodic tests and shall be performed at a frequency selected by the vendor unless frequency of testing is specified by purchaser.