

# AEROSPACE MATERIAL SPECIFICATION

An American National Standard

**SAE AMS 1452A**

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Superseding AMS 1452

## DISINFECTANT, AIRCRAFT General Purpose

### 1. SCOPE:

1.1 Form: This specification covers a general-purpose disinfectant in the form of a concentrated liquid.

1.2 Application: Primarily for use in disinfecting lavatories and galleys of passenger aircraft.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications and Aerospace Recommended Practices shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096.

#### 2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

AMS 2820 - Aerosol Packaging

AMS 2825 - Material Safety Data Sheets

AMS 4049 - Aluminum Alloy Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (Alclad 7075; -T6 Sheet, -T651 Plate)

#### 2.1.2 Aerospace Recommended Practices:

ARP 1512 - Corrosion of Aluminum Alloys by Aircraft Maintenance Chemicals, Sandwich Test

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2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM D56 - Flash Point by Tag Closed Tester

ASTM D1568 - Sampling and Chemical Analysis of Alkylbenzene Sulfonates

ASTM F483 - Total Immersion Corrosion Test for Aircraft Maintenance Chemicals

ASTM F484 - Stress Cracking of Acrylic Plastics in Contact with Liquid or Semi-Liquid Compounds

ASTM F502 - Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces

ASTM F503 - Preparing Aircraft Cleaning Compounds, Liquid Type, for Storage Stability Testing

2.3 U.S. Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Military Specifications:

MIL-P-83310 - Plastic Sheet, Polycarbonate, Transparent

2.3.2 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Material: Composition of the disinfectant shall be optional with the manufacturer but shall not contain any chemicals which will odor contaminate butter, meat, and other food. The disinfectant shall be a uniform mixture meeting the requirements of 3.2.

3.1.1 Disinfectant shall comply with registration, efficacy, toxicological, and other requirements of:

World Health Organization and Member States, as applicable

United States Environmental Protection Agency

United States Department of Agriculture

United States Public Health Service

3.1.1.1 Disinfectant shall conform to the requirements for a Class III disinfectant under the Federal Economic Poisons Control Act and shall be registered as such by the U.S. Environmental Protection Agency. The disinfectant identification label (See 5.1.2) shall show the registration number and manufacturer identification number as required by the above act.

3.2 Properties: Disinfectant shall conform to the following requirements; tests shall be performed in accordance with specified test methods on the disinfectant supplied in concentrated form and at use dilution recommended by the manufacturer as hereinafter specified:

### 3.2.1 Concentrated Disinfectant:

3.2.1.1 Flash Point: Shall be not lower than 100°C (210°F), determined in accordance with ASTM D56.

3.2.1.2 Stability: Disinfectant shall meet the requirements of 3.2.1.2.1 and 3.2.1.2.2, determined in accordance with ASTM F503.

3.2.1.2.1 Elevated Temperature: Disinfectant shall evince no separation or stratification after exposure for 120 hr  $\pm$  1 at 50°C  $\pm$  3 (120°F  $\pm$  5).

3.2.1.2.2 Cold Temperature: Disinfectant shall evince no precipitation, stratification, layering, or separation after being exposed for 120 hr  $\pm$  1 at -10°C  $\pm$  3 (15°F  $\pm$  5), warmed to room temperature, and the sample container-inverted 3 times prior to evaluation.

### 3.2.2 Concentrated Disinfectant and At Use Dilution:

#### 3.2.2.1 Corrosion of Metal Surfaces:

3.2.2.1.1 Total Immersion Corrosion: Disinfectant shall neither show evidence of staining, pitting, or corrosion nor cause an average weight change of AMS 4049 alclad aluminum alloy panels greater than 0.3 mg/cm<sup>2</sup> per 24 hr, determined in accordance with ASTM F483.

3.2.2.1.2 Sandwich Corrosion: Specimens of AMS 4049 alclad aluminum alloy, after test, shall show a rating not worse than 1, determined in accordance with ARP 1512.

3.2.2.2 Effect on Transparent Plastics: Disinfectant shall not craze, stain, or discolor Type G acrylic plastic, determined in accordance with ASTM F484. Disinfectant shall not craze, stain, or discolor MIL-P-83310 polycarbonate plastic or polysulfone plastic, determined in accordance with test procedures specified in ASTM F484 on specimens stressed for 30 min.  $\pm$  2 to an outer fiber stress of 3000 psi (20 MPa).

3.2.2.3 Effect on Painted Surfaces: Disinfectant shall neither decrease the hardness of the paint -film by more than two pencil hardness levels nor shall it produce any streaking, discoloration, or blistering of the paint film, determined in accordance with ASTM F502.

3.3 Quality: Disinfectant, as received by purchaser, shall be a uniform mixture, shall show no separation or layering, and shall be free from foreign materials detrimental to usage of the disinfectant.

## 4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of disinfectant shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.5. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the disinfectant conforms to the requirements of this specification.

## 4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to requirements for flash point (3.2.1.1), corrosion of metal surfaces (3.2.2.1), and effect on transparent plastics (3.2.2.2) are classified as acceptance tests and shall be performed on each lot.

4.2.2 Periodic Tests: Tests to determine conformance to requirements for stability (3.2.1.2) and effect on painted surfaces (3.2.2.3) are classified as periodic tests and shall be performed at a frequency selected by the manufacturer unless frequency of testing is specified by purchaser.

4.2.3 Preproduction Tests: Tests to determine conformance to all technical requirements of this specification are classified as preproduction tests and shall be performed prior to or on the initial shipment of disinfectant to a purchaser, when a change in material, processing, or both requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.3.1 For direct U.S. Military procurement, substantiating test data and, when requested, preproduction test material shall be submitted to the cognizant agency as directed by the procuring activity, the contracting officer, or the request for procurement.

4.3 Sampling: Shall be in accordance with all applicable requirements of ASTM D1568; a lot shall be all disinfectant produced in a continuous series of operations from the same batches of ingredients and presented for vendor's inspection at one time.

4.3.1 When a statistical sampling plan and acceptance quality level (AQL) have been agreed upon by purchaser and vendor, sampling shall be in accordance with such plan in lieu of sampling as in 4.3 and the report of 4.5 shall state that such plan was used.

## 4.4 Approval:

4.4.1 Disinfectant shall be approved by purchaser before disinfectant for production use is supplied, unless such approval be waived by purchaser. Results of tests on production disinfectant shall be essentially equivalent to those on the approved sample disinfectant.

4.4.2 Vendor shall use ingredients, manufacturing procedures, and methods of inspection on production disinfectant which are essentially the same as those used on the approved sample disinfectant. If necessary to make any change in ingredients or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material, processing, or both and, when requested, sample disinfectant. Production disinfectant made by the revised procedure shall not be shipped prior to receipt of reapproval.