



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

AMS 1452

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Revised

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 (AMS) and Aerospace Recommended Practices (ARP) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

AMS 2820 - Aerosol Packaging

AMS 4049 - Aluminum Alloy Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.26Cr
(Alclad 7075; -T6 Sheet, -T651 Plate)

2.1.2 Aerospace Recommended Practices:

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

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 Surfaces

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

2.3 Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120 except as specified in 2.3.4 and 2.3.5.

2.3.1 Federal Specifications:

QQ-A-250/13 - Aluminum Alloy Alclad 7075 Plate and Sheet

2.3.2 Military Specifications:

MIL-P-25690 - Plastic, Sheets and Parts, Modified Acrylic Base, Monolithic, Crack Propagation Resistant

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade or their use by governmental agencies is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

2.3.3 Military Standards:

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

2.3.4 U.S. Department of Labor, Occupational Safety and Health Administration Forms: Available from regional offices of U.S. Department of Labor, Bureau of Labor Standards.

OSHA Form 20 - Material Safety Data Sheet

2.3.5 Department of Defense Forms: Available from the local or cognizant DOD Contract Administration Services component.

DD Form 1813 - Material Safety Data Sheet

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 or QQ-A-250/13 alclad aluminum alloy panels greater than 0.3 (mg/cm²)/24 hr, determined in accordance with ASTM F483.
- 3.2.2.1.2 Sandwich Corrosion: Specimens of AMS 4049 or QQ-A-250/13 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 MIL-P-25690 stretched acrylic plastic, determined in accordance with ASTM F484. Disinfectant, likewise, shall not craze, stain, or discolor polycarbonate or polysulfone plastics, determined in accordance with test procedures specified in ASTM F484 on specimens stressed for 72 hr $\pm$ 1 to an outer fiber stress of 3000 psi (21 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 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 perform such confirmatory testing as he deems 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 of disinfectant.
 - 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 Qualification Tests: Tests to determine conformance to all technical requirements of this specification are classified as qualification tests and shall be performed on the initial shipment of disinfectant to a purchaser, when a change in material or processing 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, qualification test material shall be submitted to the cognizant qualification 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, unless otherwise specified by purchaser; 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.
- 4.4 Approval:
 - 4.4.1 Disinfectant shall be approved by purchaser before disinfectant for production use is supplied, unless such approval be waived. 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 any change is necessary in ingredients or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material or processing and, when requested, sample disinfectant. Production disinfectant made by the revised procedure shall not be shipped prior to receipt of reapproval.
- 4.5 Reports: Unless waived by purchaser, the vendor of disinfectant shall furnish with each shipment three copies of a report showing the results of tests to determine conformance to the acceptance test requirements and, when performed, the results of tests to determine conformance to the periodic test requirements and stating that the disinfectant conforms to the other technical requirements of this specification. This report shall include the purchase order number, lot number, material specification number, manufacturer's identification, and quantity.
- 4.5.1 Reports of qualification test results shall include an executed copy of OSHA Form 20 or DD Form 1813 Material Safety Data Sheet, or equivalent, covering product formulation. All requests for modification of formulation shall be accompanied by a similar form for the proposed formulation.
- 4.6 Resampling and Retesting: If any sample used in the above tests fails to meet the specified requirements, disposition of the disinfectant may be based on the results of testing three additional samples for each original nonconforming sample. Failure of any retest sample to meet the specified requirements shall be cause for rejection of the disinfectant represented and no additional testing shall be permitted. Results of all tests shall be reported.
5. PREPARATION FOR DELIVERY:
- 5.1 Packaging and Identification:
- 5.1.1 Disinfectant shall be packaged in suitable containers of a type and size agreed upon by purchaser and vendor. When supplied in aerosol form, packaging shall conform to AMS 2820.
- 5.1.2 Each container shall be legibly marked to show not less than AMS 1452, purchase order number, manufacturer's identification, lot number, U.S. Environmental Protection Agency registration number, and quantity.
- 5.1.3 Containers of disinfectant shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the disinfectant to ensure carrier acceptance and safe delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.
- 5.1.4 For direct U.S. Military procurement, packaging shall be in accordance with MIL-STD-794, Level A or Level C, as specified in the request for procurement. Commercial packaging as in 5.1.1 and 5.1.3 will be acceptable if it meets the requirements of Level C.
6. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
7. REJECTIONS: Disinfectant not conforming to this specification or to authorized modifications will be subject to rejection.