

**AEROSPACE
MATERIAL
SPECIFICATION**

AMS 3803

Issued
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WIPES, COTTON, LOOSELY WOVEN

1. SCOPE:

1.1 Form: This specification covers loosely woven cotton wipes supplied in rolls or cut sheets, as ordered.

1.2 Application: Primarily for use in fine hand cleaning operations where scratching would damage the substrate being cleaned, especially aircraft plastic transparencies.

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) 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 3609 - Plastic Sheet, Methyl Methacrylate, Heat Resistant

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

ASTM D202 - Sampling and Testing Untreated Paper Used for Electrical Insulation

ASTM D3776 - Weight (Mass) per Unit Area of Woven Fabrics

ASTM E70 - pH of Aqueous Solutions with the Glass Electrode

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

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2.3.1 Military Specifications:

MIL-P-5425 - Plastic, Sheet Acrylic, Heat Resistant

2.3.2 Military Standards:

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

3. TECHNICAL REQUIREMENTS:

3.1 Material: Shall be 100% cotton fiber which is loosely woven and purified to extract all the natural oils.

3.1.1 Color: Shall be unbleached white.

3.1.2 Cleanliness: Shall be new fabric, visually clean, free of paint, oil, grease, metal, plastic, or other foreign materials.

3.1.3 Weight: Shall be 4.0 - 6.0 oz per sq yd (135 - 200 g/m²) determined in accordance with ASTM D3776.

3.2 Properties: Wipes shall conform to the following requirements:

3.2.1 Extraction: Extractable material content, by weight, shall be determined in accordance with ASTM D202, Solvent Soluble Matter, using separate specimens in each of the following solvents:

3.2.1.1 Water: The water extractable material shall not exceed 0.75%.

3.2.1.1.1 pH: The pH of the water extract shall be 6.0 - 7.5, determined in accordance with ASTM E70.

3.2.1.2 Methyl Ethyl Ketone: The methyl ethyl ketone extractable material shall not exceed 1.0%.

3.2.1.3 Methylene Chloride: The methylene chloride extractable material shall not exceed 1.0%.

3.2.1.4 Naphtha: The aliphatic naphtha extractable material shall not exceed 1.0%.

3.2.2 Water Absorption: The wipes shall readily absorb water when tested in accordance with ASTM D202, Absorption (Rise of Water).

3.2.3 Abrasion: Wipes shall not cause streaks or hairline scratches on the surface of AMS 3609 or MIL-P-5425 plastic sheet, tested in accordance with 4.5.2.

3.3 Quality: Wipes, as received by purchaser, shall be uniform in quality and condition, clean, and free from foreign materials and from internal and external imperfections detrimental to usage of the wipes.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of the wipes 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 4.6. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the wipes conform to the requirements of this specification.

4.2 Classification of Tests:

4.2.1 Acceptance Tests: Tests to determine conformance to requirements for color (3.1.1), cleanliness (3.1.2), pH (3.2.1.1.1), water absorption (3.2.2), abrasion (3.2.3), and quality (3.3) are classified as acceptance tests and shall be performed on each lot.

4.2.2 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 wipes to a purchaser, when a change in material or processing, or both, requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.2.2.1 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 as follows:

4.3.1 For Acceptance Tests: Sufficient wipes shall be taken at random from each shipment to perform all required tests. The number of determinations for each requirement shall be as specified in the applicable test procedure or, if not specified therein, not less than three.

4.3.1.1 A lot shall be all wipes processed in one continuous production run and presented for vendor's inspection at one time. An inspection lot shall not exceed 5000 lb (2275 kg) and may be packaged in smaller quantities under the basic lot approval provided lot identification is maintained.

4.3.1.2 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 4.3.1 and the report of 4.6.1 shall state that such plan was used.

4.3.2 For Preproduction Tests: As agreed upon by purchaser and vendor.

4.4 Approval:

- 4.4.1 Sample wipes shall be approved by purchaser before wipes for production use are supplied, unless such approval be waived by purchaser. Results of tests on production wipes shall be essentially equivalent to those on the approved sample wipes.
- 4.4.2 Vendor shall use ingredients, manufacturing procedures, and methods of inspection on production wipes which are essentially the same as those used on the approved sample wipes. If necessary to make any change in ingredients, in type of equipment for processing, or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material or processing, or both, and, when requested, sample wipes. Production wipes made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Test Methods:

- 4.5.1 Test Conditions: All tests shall be conducted under standard test conditions of 20° - 30°C (68° - 86°F) and 30 - 80% relative humidity, unless otherwise specified.
- 4.5.2 Abrasion Test: Shall be performed by making a pad of the wipe to be tested approximately one in. (25 mm) wide and 1/2 in. thick. Attach the pad, by suitable means, to a one lb (450 g) weight which is approximately 1 x 3.5 in. (25 x 90 mm). Rub the weighted wipe with not less than 500 strokes across the surface of a dry, clean, scratch-free sheet of AMS 3609 or MIL-P-5425 acrylic plastic not less than 1/8 in. (3 mm) thick. The rub area shall be 4 - 6 sq in. (25 - 40 cm²). Upon completion of the rubbing, view the sheet through a light source held at a 45 deg angle to the surface to determine the presence of streaks or hairline scratches caused by the rubbing.
- 4.6 Reports: The vendor of the wipes shall furnish with each shipment a report showing the results of tests to determine conformance to the acceptance test requirements and stating that the wipes conform to the other technical requirements of this specification. This report shall include the purchase order number, AMS 3803, lot number, vendor's material designation, and quantity.
- 4.7 Resampling and Retesting: If any specimen used in the above tests fails to meet the specified requirements, disposition of the wipes may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the wipes represented and no additional testing shall be permitted. Results of all tests shall be reported.