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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 1625B

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Superseding AMS 1625A

Desmutter, Aluminum Powdered

1. SCOPE:

This specification covers powdered materials, solutions of which are used to remove smut from aluminum surfaces treated with etch-type oxidation and corrosion removers.

1.1 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 following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications 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 4037	Aluminum Alloy Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn, (2024; -T3 Flat Sheet, -T351 Plate), Solution Heat Treated

QUESTIONS REGARDING THIS DOCUMENT: (724) 772-7161 FAX: (724) 776-0243
TO PLACE A DOCUMENT ORDER: (724) 776-4970 FAX: (724) 776-0790
SAE WEB ADDRESS: http://www.sae.org

2.2 ASTM Publications:

Available from ASTM, 1916 Race Street, Philadelphia, PA 19103.

ASTM D1193	Reagent Water
ASTM F484	Stress Crazing of Acrylic Plastics in Contact with Liquid or Semi-Liquid Compounds
ASTM F502	Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces

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-25690	Plastic, Sheets and Parts, Modified Acrylic Base, Monolithic, Crack Propagation Resistant
MIL-C-38334	Corrosion Removing Compound, Prepaint, for Aircraft Aluminum Surfaces

2.3.2 Military Standards:

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

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Shall be optional with the manufacturer but shall yield a freely-flowing, powdered product conforming to the requirements of 3.2.

3.2 Properties:

Desmutter shall conform to the following requirements; tests shall be conducted in accordance with specified test methods on a solution of the product at the lowest use dilution recommended by the manufacturer:

3.2.1 Smut Removing Ability: The desmutter shall remove smut from aluminum alloy surfaces as well as, or better than, the control formula, determined in accordance with 3.2.1.1.

3.2.1.1 Clean six AMS 4037 aluminum alloy specimens of convenient size by wiping with a clean cloth wet with methyl ethyl ketone or other suitable solvent. Immerse the specimens in 500 mL of undiluted MIL-C-38334, Type I, compound at 20° - 35 °C (68° - 95 °F) for 5 minutes ± 0.25. The MIL-C-38334 compound shall not be agitated during the immersion period. Remove specimens and immediately flush away residual compound with flowing tap water. Immediately immerse three of the six specimens in the desmutter solution maintained at the midpoint of the manufacturer's recommended operating temperature range. When manufacturer makes no recommendations on temperature, the desmutter solution shall be maintained at 24 °C ± 3 (75 °F ± 5). Immerse the other three specimens in the control solution of 3.2.1.1.1. The test solution and the control solution shall not be agitated during the immersion period. After 60 seconds ± 15, remove the specimens from the solutions. Flush surfaces of the specimens with flowing water followed by rinsing with flowing ASTM D1193, Type IV, water. Allow specimens to air dry. Visually compare the degree of smut removal from the specimens immersed in the desmutter solution with the specimens immersed in the control solution.

3.2.1.1.1 Desmutter Control Solution: Shall be a solution containing 10 grams ± 0.5 of 90% by weight sodium bisulfate ($NaHSO_4$) and 10% by weight chromium trioxide ($Cr0_3$) per litre of solution dissolved in ASTM D1193, Type IV, water and operated at 24 °C ± 3 (75 °F ± 5).

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

3.2.3 Effect on Plastics: The desmutter shall not craze, stain, or discolor MIL-P-25690 stretched acrylic plastic, determined in accordance with ASTM F484.

3.2.4 Etch Rate on Aluminum Alloy: The desmutter, tested in accordance with 3.2.4.1, shall not remove more than 10 mg from any test specimen.

3.2.4.1 Clean three AMS 4037 aluminum alloy specimens, approximately 0.040 x 1 x 2 inches (1.02 x 25 x 51 mm), by wiping with a clean cloth wet with methyl ethyl ketone or other suitable solvent. Allow specimens to air dry. Weigh each specimen to the nearest 0.1 milligram. Immerse specimens for 30 minutes ± 0.25 in 500 mL of desmutter solution maintained at the highest temperature of the manufacturer's recommended operating range. When manufacturer makes no recommendation on temperature, the desmutter solution shall be maintained at 35 °C ± 3 (95 °F ± 5). Test solution shall not be agitated during the immersion period. Remove specimens, immediately flush residual desmutter solution from the specimen surfaces with flowing water, followed by rinsing with flowing ASTM D1193, Type IV, water. Allow to air dry. Reweigh specimens and calculate weight loss of each specimen.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection:

The vendor of the desmutter 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 desmutter conforms to the requirements of this specification.

4.2 Classification of Tests:

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

4.2.1 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, contracting officer, or request for procurement.

4.3 Sampling:

Sufficient desmutter shall be taken at random from each lot 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 A lot shall be all desmutter manufactured at one time from one group of raw materials under the same fixed conditions and presented for vendor's inspection at one time.

4.3.2 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 and the report of 4.5 shall state that such plan was used.

4.4 Approval:

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

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