



AEROSPACE MATERIAL SPECIFICATION	AMS1625™	REV. C
	Issued 1978-01 Revised 2010-12 Reaffirmed 2020-04 Superseding AMS1625	
Desmutter, Aluminum Powdered		

RATIONALE

AMS1625C is a Five Year Review and update of this specification.

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 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 cancelled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or 724-776-4970 (outside USA), www.sae.org.

AMS4037	Aluminum Alloy Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn, (2024; -T3 Flat Sheet, -T351 Plate), Solution Heat Treated
AMS-QQ-A-200	Aluminum Alloy, Bar, Rod, Shapes, Structural Shapes, Tube, and Wire, Extruded: General Specification for

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Documents
Document Sharing Hub

2.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM D 1193	Reagent Water
ASTM F 484	Stress Cracking of Acrylic Plastics in Contact with Liquid or Semi-Liquid Compounds
ASTM F 502	Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces
ASTM F 2111	Measuring Intergranular Attack or End Grain Pitting on Metals Caused by Aircraft Chemical Processes

2.3 U.S. Government Publications

Available from the Document Automation and Production Service (DAPS), Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, Tel: 215-697-6257, <http://assist.daps.dla.mil/quicksearch/>.

MIL-P-25690	Plastic, Sheets and Parts, Modified Acrylic Base, Monolithic, Crack Propagation Resistant
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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 AMS4037 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 10% sodium hydroxide (NaOH) solution at 68 to 95 °F (20 to 35 °C) for 2 minutes $\pm$ 0.5. The 10% NaOH solution shall not be agitated during the immersion period. Remove specimens and immediately flush away residual NaOH solution 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 75 °F $\pm$ 5 (24 °C $\pm$ 3). 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 $\pm$ 15, remove the specimens from the solutions. Flush surfaces of the specimens with flowing water followed by rinsing with flowing ASTM D 1193, 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 $\pm$ 0.5 of 90% by weight sodium bisulfate (NaHSO₄) and 10% by weight chromium trioxide (CrO₃) per liter of solution dissolved in ASTM D 1193, Type IV, water and operated at 24 °C $\pm$ 3 (75 °F $\pm$ 5).