



AEROSPACE MATERIAL SPECIFICATION

AMS1536™**REV. C**

Issued 1981-01
Reaffirmed 2008-01
Revised 2018-09

Superseding AMS1536B

Cleaner for Aircraft Components
Cold Tank Type, Solvent-Base

RATIONALE

- ASTM F483 Total Immersion Test for Aircraft Maintenance Materials is more consistent with all other similar call outs for Total immersion Corrosion and the format (Table 1) in 1536 is exactly the same as the ones found in AMS1526, 1527, 1528, 1529 and 1533 so it makes sense that it should be the same procedure for AMS1536.
- PD -680, Type II is obsolete and has been replaced with MIL-PRF-680, Type II.
- The hydrogen Embrittlement test Parameters must be stated and the same change has already been made in other AMS Specs coming up for review (see AMS1526C).

1. SCOPE

1.1 Form

This specification covers a tank-type cleaner in the form of a liquid.

1.2 Application

This cleaner has been used typically for removing greasy soils, carbon, or rubber from painted and unpainted aircraft components, such as wheels and landing gear, by immersion in cleaner as supplied or as solvent diluted, but usage is not limited to such applications. This cleaner is not recommended for use on plastic or aircraft windows due to possible crazing.

1.3 Safety - Hazardous Materials

Cleaner may contain chemicals which, if improperly used, could be hazardous to the health and safety of operators. Protective clothing, including eye shields, suitable gloves, and apron, should be worn when preparing and using the cleaner. Solutions shall be prepared and operated under conditions of adequate fume extraction and with due regard to the safety recommendations of the manufacturer of the cleaner together with local workshop safety regulations.

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.

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Documents
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2.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS2470	Anodic Treatment of Aluminum Alloys, Chromic Acid Process
AMS2475	Protective Treatments, Magnesium Alloys
AMS2825	Material Safety Data Sheets
AMS4037	Aluminum Alloy, Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T351 Plate) Solution Heat Treated
AMS4041	Aluminum Alloy, Sheet and Plate, Alclad, 4.4Cu - 1.5Mg - 0.60Mn (2024, -T3 Sheet/-T351 Plate with 1½% Alclad) Solution Heat Treated, Cold Worked and Naturally Aged
AMS4049	Aluminum Alloy, Sheet and Plate, Alclad, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (Alclad 7075; -T6 Sheet - T651 Plate), Solution and Precipitation Heat Treated
AMS4376	Plate, Magnesium Alloy, 3.0Al - 1.0Zn - 0.20Mn (AZ31B-H26), Cold Rolled and Partially Annealed
AMS4911	Titanium Alloy, Sheet, Strip, and Plate, 6Al - 4V, Annealed
AMS5045	Steel, Sheet and Strip, 0.25 Carbon, Maximum, Hard Temper
SAE J1966	Lubricating Oils, aircraft Piston Engine (Non-Dispersant Mineral Oil)

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 D13	Spirits of Turpentine
ASTM D93	Flash Point by Pensky-Martens Closed Cup Tester
ASTM D1193	Reagent Water
ASTM D4057	Manual Sampling of Petroleum and Petroleum Products
ASTM F483	Total Immersion Corrosion Test for Aircraft Maintenance Chemicals
ASTM F485	Effects of Cleaners on Unpainted Aircraft Surfaces
ASTM F502	Effects of Cleaning and Chemical Maintenance Materials on Painted Aircraft Surfaces
ASTM F519	Mechanical Hydrogen Embrittlement Evaluation of Plating Processes and Service Environments
ASTM F1105	Preparing Aircraft Cleaning Compounds, Liquid Type, Solvent Base, for Storage Stability Testing
ASTM F1110	Sandwich Corrosion Test
ASTM F1111	Corrosion of Low Embrittling Cadmium Plate by Aircraft Maintenance Chemicals

2.3 U.S. Government Publications

Copies of these documents are available online at <http://quicksearch.dla.mil>.

A-A 59317	Carbon Black, Powdered, Dry
MIL-PRF-680	Degreasing Solvent
MIL-STD-870	Cadmium Plating, Low Embrittlement, Electrodeposition
MIL-STD-2073-1	DOD Standard Practice for Military Packaging

NOTE: This spec not for new design.

2.4 Other Publications

ANSI Z400.1/Z129.1	Hazardous Workplace Chemicals – Hazard Evaluation and Safety Data Sheet and Precautionary Labeling Preparation”
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3. TECHNICAL REQUIREMENTS

3.1 Material

The composition of the cleaner shall be optional with the manufacturer but should contain water, biodegradable surfactants and/or soaps, emulsifiers, and solvents as required to produce a homogeneous product meeting the requirements of 3.2.

3.2 Properties

The cleaner shall conform to the following requirements; tests shall be performed in accordance with specified test methods on the cleaner supplied in concentrated form and at use dilution recommended by the manufacturer.

3.2.1 Corrosion of Metal Surfaces

3.2.1.1 Sandwich Corrosion

Cleaner shall produce a rating not worse than 1, determined in accordance with ASTM F1110.

3.2.1.2 Total Immersion Corrosion

The cleaner shall neither cause evidence of corrosion nor a weight change of any test panel greater than shown in Table 1, determined in accordance with ASTM F483:

Table 1 - Allowable weight change

Test Panel		Weight Change mg/cm ² per 24 hours
AMS4037	Aluminum Alloy, anodized as in AMS2470	0.3
AMS4041	Aluminum Alloy	0.3
AMS4049	Aluminum Alloy	0.3
AMS4376	Magnesium Alloy, dichromate treated as in AMS2475	0.2
AMS4911	Titanium Alloy	0.1
AMS5045	Carbon Steel	0.8

3.2.1.3 Low-Embrittling Cadmium Plate

Test panels, coated with low-embrittling cadmium plate, shall not show a weight change greater than 0.3 mg/cm² per 24 hours, determined in accordance with ASTM F1111.