



AEROSPACE MATERIAL SPECIFICATION

AMS1375™

REV. B

Issued 1978-01
Revised 1994-01
Reaffirmed 2021-07

Superseding AMS1375A

Remover, Paint
Epoxy and Polyurethane Paint Systems

RATIONALE

AMS1375B has been reaffirmed to comply with the SAE five-year review policy.

1. SCOPE:

1.1 Form:

This specification covers an alkaline-type, thickened paint remover in the form of a liquid.

1.2 Application:

Primarily for removing epoxy primer with epoxy polyamide or linear polyurethane paint topcoat from aluminum alloys and magnesium alloys.

1.3 Precautions:

1.3.1 Paint remover covered by this specification contains ingredients harmful to skin and eyes; therefore, use goggle-type eyeglasses and rubber gloves, apron, and rubber boots when handling this product.

1.3.2 Avoid contact of this paint remover with rubber, resin laminates, asphaltic-base floors, and walkways of aircraft. Avoid use in enclosed and unventilated areas.

1.4 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.

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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 publications shall be the issue in effect on the date of the purchase order.

2.1 SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2400	Cadmium Plating
AMS 2470	Anodic Treatment of Aluminum Alloys, Chromic Acid Process
AMS 2473	Chemical Treatment for Aluminum Alloys, General Purpose Coating
AMS 2475	Protective Treatments, Magnesium Alloys
AMS 2825	Material Safety Data Sheets
AMS 4037	Aluminum Alloy Sheet and Plate, 4.4Cu - 1.5Mg - 0.60Mn (2024; -T3 Flat Sheet, -T351 Plate), Solution Heat Treated
AMS 4041	Aluminum Alloy Sheet and Plate, Alclad, 4.4Cu - 1.5Mg - 0.60Mn (Alclad 2024 and 1-1/2% Alclad 2024-T3 Flat Sheet; 1-1/2% Alclad 2024-T351 Plate)
AMS 4045	Aluminum Alloy Sheet and Plate, 5.6Zn - 2.5Mg - 1.6Cu - 0.23Cr (7075; -T6 Sheet, -T651 Plate), Solution and Precipitation Heat Treated
AMS 4049	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
AMS 4377	Magnesium Alloy Sheet and Plate, 3.0Al - 1.0Zn (AZ31B-H24), Cold Rolled, Partially Annealed
AMS 4911	Titanium Alloy Sheet, Strip, and Plate, 6Al - 4V, Annealed
AMS 5045	Steel Sheet and Strip, 0.25 Carbon, maximum, Hard Temper
AMS 6350	Steel Sheet, Strip, and Plate, 0.95Cr - 0.20Mo (0.28 - 0.33C) (SAE 4130)

2.2 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM D 1193	Reagent Water
ASTM F 483	Total Immersion Corrosion Test for Aircraft Maintenance Chemicals
ASTM F 519	Mechanical Hydrogen Embrittlement Testing of Plating Processes and Aircraft Maintenance Chemicals
ASTM F 1080	Determining the Consistency of Viscous Liquids Using a Consistometer
ASTM F 1110	Sandwich Corrosion Test
ASTM F 1111	Corrosion of Low Embrittling Cadmium Plate by Aircraft Maintenance Chemicals

2.3 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.3.1 Federal Specifications:

VV-W-95	Wax, Paraffin, Technical
PPP-D-729	Drum, Shipping and Storage, Steel, 55 Gallon, (208 Liters)
PPP-P-704	Pails, Metal Shipping, Steel, (1 through 12 Gallons)
PPP-P-1892	Paint, Varnish, Lacquer, and Related Materials, Packaging, Packing, and Marking of

2.3.2 Federal Standards:

FED-STD-141	Paint, Varnish, Lacquer and Related Materials, Methods of Inspection, Sampling and Testing
FED-STD-595	Color (Requirements for Individual Color Chips)

2.3.3 Military Specifications:

MIL-D-6998	Dichloromethane, Technical
MIL-A-9962	Abrasive Mats, Non-Woven, Non-Metallic
MIL-C-22750	Coating, Epoxy Polyamide
MIL-P-23377	Primer Coating, Epoxy Polyamide, Chemical and Solvent Resistant
MIL-T-23397	Tape, Pressure-Sensitive Adhesive, for Masking During Paint Stripping Operations
MIL-C-81706	Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys
MIL-C-83286	Coating, Urethane, Aliphatic Isocyanate, for Aerospace Applications

2.3.4 Military Standards:

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MS 24694	Screw, Machine, Flat Countersunk Head, 100 Deg, Structured, Cross Recessed

2.3.5 USAF ANA Standards:

AN 315	Nut, Plain, Airframe
AN 960	Washer, Flat

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall be a thixotropic paint remover consisting of organic solvents, evaporation retarders, wetting agents, and other ingredients required to provide a product meeting the requirements of 3.2.

3.2 Properties:

(R)

The paint remover shall conform to the following requirements; tests shall be performed on the as-supplied product in accordance with specified test methods; all tests shall be conducted at $24\text{ }^{\circ}\text{C} \pm 3$ ($75\text{ }^{\circ}\text{F} + 5$) and at a relative humidity of $50\% + 5$, unless otherwise specified herein:

- 3.2.1 Toxicity: The product shall be free from chemicals and solvents in the compounded mixture which may prove dangerously corrosive or may produce vapors in such concentration as to become a medical hazard to personnel when used for its intended purpose in accordance with manufacturer's recommendations. (See 1.4)
- 3.2.2 Consistency: The paint remover shall flow to a point between 18 and 23 cm in 5 minutes, determined in accordance with ASTM F 1080. The remover shall be of such consistency that a smooth, even coating can be applied by brushing, flowing, or spraying onto, and will adhere to, the vertical surface of test panels and painted surfaces of aircraft for sufficient time for the paint remover to be effective.
- 3.2.3 Flammability: The paint remover shall not continue to burn longer than 3 seconds after removal of the flame, determined in accordance with 4.5.1.
- 3.2.4 Corrosion of Metal Surfaces:
 - 3.2.4.1 Sandwich Corrosion: Specimens, after test, shall show a rating not worse than 1, (R) determined in accordance with ASTM F 1110.

- 3.2.4.2 Total Immersion Corrosion: The product shall neither show evidence of pitting of the panels nor cause a weight change of any test panel greater than the following, determined in accordance with ASTM F 483:

	Test Panel	Weight Change mg/cm ² per 24 hours
(R)	AMS 4037 Aluminum Alloy, anodized as in AMS 2470	0.3
	AMS 4041 Aluminum Alloy	0.3
	AMS 4045 Aluminum Alloy, anodized as in AMS 2470	0.3
	AMS 4049 Aluminum Alloy	0.3
	AMS 4377 Magnesium Alloy, dichromate treated as in AMS 2475	0.2
	AMS 4911 Titanium Alloy	0.1
	AMS 5045 Carbon Steel, polished to a surface finish of 65 microinches (1.7 mm) or better	0.8

- 3.2.4.3 Low-Embrittling Cadmium Plate: 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 F 1111.

- 3.2.4.4 Dissimilar Metal Corrosion: There shall be no significant discoloration or evidence of corrosion, determined in accordance with 4.5.2. Slight discoloration of cadmium plated low-alloy steel panels is permissible.

- 3.2.5 Hydrogen Embrittlement: The paint remover shall be nonembrittling, determined in accordance with ASTM F 519, Type 1a, 1c, or 2a.

3.2.6 Storage Stability:

- 3.2.6.1 Short-Term: The paint remover shall not cake, clot, gel, or separate after being stored at room temperature, undisturbed, for 6 days in a darkened area. The product, tested for stability in accordance with 4.5.3, shall neither polymerize or show significant changes in physical appearance nor exhibit evidence of adversely affecting steel surfaces. After being tested as in 4.5.3, the remover shall completely lift the finish from test panels, prepared and tested in accordance with 4.5.5, as well as, or better than, a sample of the original, unexposed paint remover.

- 3.2.6.2 Extended: Paint remover, stored as in 4.5.4, shall show no visible evidence of deterioration. It shall, after storage, meet all the technical requirements of this specification except that short-term storage stability need not be determined.

- 3.2.7 Paint Stripping Efficiency: The paint remover, tested in accordance with 4.5.5, shall remove not less than 90% of the paint from the exposed surface within 10 minutes at $24\text{ }^{\circ}\text{C} \pm 2$ ($75\text{ }^{\circ}\text{F} \pm 3$) and within 20 minutes at $10\text{ }^{\circ}\text{C} \pm 1$ ($50\text{ }^{\circ}\text{F} \pm 2$).
- 3.2.7.1 Relative Stripping Efficiency: Shall be equal to, or better than, that of the control formula of 4.5.5.2.1, measured as the time to produce equal percentages of stripping or as the percentage of panel area stripped in equal lengths of time.
- 3.2.8 Rinsability: The loosened paint and spent remover shall be easily removed by water rinsing, determined in accordance with 4.5.6. If residues or noticeable water breaks occur, they shall not adversely affect the drying or adhesion of an applied paint system.
- 3.2.9 Refinishing Properties of Stripped Surfaces: Following stripping and wiping clean, using cloths saturated with methyl ethyl ketone or other suitable solvent, the paint remover shall leave a surface suitable for refinishing, including re-surface treatment, determined in accordance with 4.5.7.
- 3.2.10 Volatility: Shall be no greater than the volatility of distilled water, determined in accordance with 4.5.8.
- 3.2.11 Performance: The paint remover, used in accordance with manufacturer's recommendations, shall show satisfactory paint stripping performance on actual paint schedules that have been in service. This performance test shall be determined after the product has met all other technical requirements of this specification.

3.3 Quality:

Paint remover, as received by purchaser, shall be homogeneous, uniform in consistency, suitable for spray, brush, or flow application, and free from skins and lumps and from foreign materials detrimental to usage of the paint remover.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: (R)

The vendor of the product shall supply all samples for vendor's tests and shall be responsible for performing all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing deemed necessary to ensure that the product conforms to the requirements of this specification.

4.2 Classification of Tests:

- 4.2.1 Acceptance Tests: Tests for consistency (3.2.2), flammability (3.2.3), total immersion corrosion (anodized aluminum alloys only) (3.2.4.2), low-embrittling cadmium plate (3.2.4.3), short-term storage stability (3.2.6.1), paint stripping efficiency (3.2.7), rinsability (3.2.8), volatility (3.2.10), and quality (3.3) are acceptance tests and shall be performed on each lot.