

Submitted for recognition as an American National Standard

**THINNER  
Alcohol-Ester**

1. SCOPE:

1.1 Type: This specification covers a blend of alcohols and esters for use as a component of organic coatings.

1.2 Applications: Primarily as a thinner for, and as the principal portion of the volatile fraction of, AMS 3132 synthetic resin varnish.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications 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 2825 - Material Safety Data Sheets

AMS 3132 - Varnish, Phenolic Resin, Corrosion-Preventive

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

ASTM D891 - Specific Gravity of Liquid Industrial Chemicals

ASTM D1078 - Distillation Range of Volatile Organic Liquids

ASTM E300 - Sampling Industrial Chemicals

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 Federal Specifications:

PPP-P-1892 - Paint, Varnish, Lacquer, and Related Materials, Packaging, Packing, and Marking of

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Thinner shall be a thoroughly blended mixture of the following composition by weight:

	min	max
Amyl Alcohol	58	62%
Proprietary or Specially Denatured Ethyl Alcohol	13	17%
Amyl or Butyl Acetate	23	27%

3.1.1 The denatured ethyl alcohol shall be of such composition that the ethyl alcohol cannot be separated by distillation and shall be compatible with the other thinner components.

3.2 Properties: Thinner shall conform to the following requirements:

3.2.1 Specific Gravity: Shall be 0.822 - 0.832 at 15°/15°C (60°/60°F), determined in accordance with ASTM D891.

3.2.2 Distillation Range: Shall be 73° - 144°C (164° - 292°F), determined in accordance with ASTM D1078.

3.2.3 Odor: Shall be fruity, characteristic of esters.

3.3 Quality: Thinner, as received by purchaser, shall be clear, colorless, and free from suspended matter and shall be compatible with AMS 3132 varnish. Impurities shall not be present in amounts which might adversely affect its suitability for the primary applications specified.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of thinner 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 thinner 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 thinner to a purchaser, on each batch, when a change in material, processing, or both 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, the contracting officer, or the request for procurement.
- 4.3 Sampling: Shall be in accordance with ASTM E300.
- 4.4 Approval:
- 4.4.1 Thinner shall be approved by purchaser before thinner for production use is supplied, unless such approval be waived by purchaser. Results of tests on production thinner shall be essentially equivalent to those on the approved sample.
- 4.4.2 Vendor shall use the same ingredients, manufacturing procedures and processes, and methods of inspection on production thinner which are essentially the same as those used on the approved sample thinner. If necessary to make any change in ingredients or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in material, processing, or both, and, when requested, sample thinner. Production thinner made by the revised procedure shall not be shipped prior to receipt of reapproval.
- 4.5 Reports: The vendor of thinner shall furnish with each shipment a report stating that the thinner conforms to the composition specified and showing the results of tests to determine conformance to the specific gravity and distillation range requirements. This report shall include the purchase order number, AMS 3170E, batch number, and quantity.
- 4.5.1 A material safety data sheet conforming to AMS 2825, or equivalent, shall be supplied to each purchaser prior to, or concurrent with, the report of preproduction test results or, if preproduction testing be waived by purchaser, concurrent with the first shipment of thinner for production use. Each request for modification of thinner formulation shall be accompanied by a revised data sheet for the proposed formulation.
- 4.6 Resampling and Retesting: If any sample used in above tests fails to meet the specified requirements, disposition of the thinner may be based on the results of testing three additional samples for each original nonconforming sample. Failure of any retest sample to meet the specified requirements shall be cause for rejection of the thinner represented and no additional testing shall be permitted. Results of all tests shall be reported.
5. PREPARATION FOR DELIVERY:
- 5.1 Packaging and Identification:
- 5.1.1 Thinner shall be supplied in 5 gal (20 L) metal containers with sealed openings, unless otherwise specified. Interior of containers shall be free from corrosion and, if treated to prevent corrosion, shall be coated with a material unaffected by the solvent action of the contents.