



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
TWO PENNSYLVANIA PLAZA, NEW YORK, N. Y. 10001

AMS 3161

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Revised

INSPECTION OIL, ODORLESS Heavy Solvent

1. SCOPE:

- 1.1 Form: This specification covers a petroleum base material in the form of a liquid solvent.
- 1.2 Application: Primarily as a vehicle for magnetic particle suspensions and as a fluid for testing aircraft fuel tanks.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

- 2.1 SAE Aerospace Publications: Available from Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York 10001.

2.1.1 Aerospace Material Specification:

AMS 2350 - Standards and Test Methods

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

ASTM D56 - Flash Point by Tag Closed Tester
ASTM D86 - Distillation of Petroleum Products
ASTM D88 - Saybolt Viscosity
ASTM D130 - Detection of Copper Corrosion from Petroleum Products by The Copper Strip Tarnish Test
ASTM D156 - Saybolt Color of Petroleum Products, Saybolt Chromometer Method
ASTM D270 - Sampling Petroleum and Petroleum Products
ASTM D484 - Stoddard Solvent
ASTM D1298 - Density, Specific Gravity, or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method

3. TECHNICAL REQUIREMENTS:

- 3.1 Material: Shall consist of a carefully refined straight run distillate from crude petroleum without the admixture of benzol, ether, alcohols, chlorinated hydrocarbons, and other compounds not occurring naturally in crude petroleum.
- 3.2 Properties: Solvent shall conform to the following requirements:
- 3.2.1 Color: Water white, not darker than No. 25 Saybolt, determined in accordance with ASTM D156.
- 3.2.2 Flash Point: Not lower than 150 F (65.6 C), determined in accordance with ASTM D56.
- 3.2.3 Corrosion: Shall be not greater than Class 1, determined at 212 F $\pm$ 2 (100 C $\pm$ 1.1) in accordance with ASTM D130.

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- 3.2.4 Distillation: Upon distillation, solvent shall show an even chain of boiling points and shall conform to the following values, determined in accordance with ASTM D86.

	Temperature	
	min	max
Initial Boiling Point	375 F (190.6 C)	---
Dry End Point	435 F (223.9 C)	475 F (246.1 C)

- 3.2.5 Doctor Test: Shall be negative, determined in accordance with ASTM D484.
- 3.2.6 API Gravity: Shall be 50 - 54, determined in accordance with ASTM D1298.
- 3.2.7 Viscosity: Shall be 32 - 34 SUS, determined in accordance with ASTM D88 at 100 F (37.8 C).
- 3.3 Quality: Solvent shall be free of odor, clear, and free from suspended solids, undissolved water, free acid, alkali, inorganic compounds, and other compounds known to be toxic or to cause harmful physiological or dermal effects.

4. QUALITY ASSURANCE PROVISIONS:

- 4.1 Responsibility for Inspection: The vendor shall supply all samples 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 perform such confirmatory testing as he deems necessary to assure that material 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 or routine control tests.
- 4.3 Sampling: Shall be in accordance with all applicable requirements of ASTM D270, unless otherwise specified.
- 4.3.1 For purposes of sampling, a lot shall consist of solvent from one batch or tank offered for delivery at one time. If material cannot be identified by batch or tank, a lot shall consist of not more than 10,000 gal (37,850 dm³) offered for delivery at one time.
- 4.4 Approval:
- 4.4.1 Solvent shall be approved by purchaser before solvent for production use is supplied, unless such approval be waived. Results of tests on production solvent shall be essentially equivalent to those on the approved sample.
- 4.4.2 Vendor shall use ingredients, manufacturing procedures, and methods of routine inspection of production solvent to determine conformance to requirements of this specification which are essentially the same as those used on the approved sample solvent. If any change is necessary in ingredients or in manufacturing procedures, vendor shall submit for reapproval of the solvent a detailed statement of the revised operations and, when requested, sample solvent. No production solvent made by the revised procedure shall be shipped prior to receipt of reapproval.
- 4.5 Reports: The vendor of the solvent shall furnish with each shipment three copies of a report showing the results of tests made on each lot of the product to determine conformance to the requirements of this specification. This report shall include the purchase order number, material specification number, lot number, and quantity.