SAE Aerospace
An SAE International Group

AEROSPACE MATERIAL SPECIFICATION

SAE AMS 3161B

Issued 1972-05
Revised 2001-03
Reaffirmed 2010-05

Superseding AMS 3161A

Oil, Odorless Heavy Solvent

1. SCOPE:

1.1 Form:

This specification covers a petroleum base material in the form of a liquid.

1.2 Application:

This fluid has been used typically for testing aircraft fuel tanks, but usage is not limited to such application.

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

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

2.1 ASTM Publications:

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

ASTM D 56	Flash Point by Tag Closed Tester
ASTM D 86	Distillation of Petroleum Products
ASTM D 88	Saybolt Viscosity
ASTM D 130	Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test
ASTM D 156	Saybolt Color of Petroleum Products (Saybolt Chromometer Method)
ASTM D 235	Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvents)
ASTM D 1298	Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method
ASTM D 4057	Manual Sampling of Petroleum and Petroleum Products

3. TECHNICAL REQUIREMENTS:

3.1 Material:

Shall consist of a 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 D 156.

3.2.2 Flash Point: Not lower than 150 °F (66 °C), determined in accordance with ASTM D 56.

3.2.3 Corrosion: Shall be not greater than Class 1, determined at 212 °F ± 2 (100 °C ± 1) in accordance with ASTM D 130.

3.2.4 Distillation: Fluid shall show an even chain of boiling points and shall conform to values shown in Table 1, determined in accordance with ASTM D 86.

TABLE 1 - Distillation Points

Points	Min	Max
Initial Boiling Point	375 °F (191 °C)	--
Dry End Point	435 °F (224 °C)	475 °F (246 °C)

3.2.5 Doctor Test: Shall be negative, determined in accordance with ASTM D 235.

3.2.6 API Gravity: Shall be 46 to 50, determined in accordance with ASTM D 1298.

3.2.7 Viscosity: Shall be 30 to 32 SUS, determined in accordance with ASTM D 88 at 100 °F (38 °C).

3.3 Quality:

Fluid, as received by purchaser, 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 of the fluid shall supply all samples for vendor's tests and shall be responsible for the performance of all required tests. Purchaser reserves the right to sample and to perform any confirmatory testing as deemed necessary to ensure that the fluid conforms to the requirements of this specification.

4.2 Classification of Tests:

All technical requirements are acceptance tests and preproduction tests and shall be performed prior to or on the initial shipment of oil to a purchaser, or each lot, when a change in ingredients and/or processing requires reapproval as in 4.4.2, and when purchaser deems confirmatory testing to be required.

4.3 Sampling and Testing:

Shall be in accordance with all applicable requirements of ASTM D 4057 or other procedure acceptable to purchaser; a lot shall be all fluid from a single refinery batch offered for vendor's inspection 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 by purchaser. 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 inspection on production solvent which are essentially the same as those used on the approved sample solvent. If necessary to make any change in ingredients or in manufacturing procedures, vendor shall submit for reapproval a statement of the proposed changes in ingredients and/or processing and, when requested, sample solvent. Production solvent made by the revised procedure shall not be shipped prior to receipt of reapproval.

4.5 Reports:

The vendor of fluid shall furnish with each shipment a report showing the results of tests made on each lot to determine conformance to the technical requirements. This report shall include the purchase order number, lot number, AMS 3161B, and quantity.

4.6 Resampling and Retesting:

If any sample used in the above tests fails to meet the specified requirements, disposition of the fluid 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 fluid represented. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Identification:

Each container of fluid shall be legibly marked with not less than AMS 3161A, purchase order number, manufacturer's identification, lot number, quantity, and directions for use or precautions for storage.

5.2 Packaging:

5.2.1 A lot of fluid may be packaged in small quantities and delivered under the basic lot approval provided lot identification is maintained.

5.2.2 Fluid shall be packaged in containers of a type and size acceptable to purchaser.

5.2.3 Containers of fluid shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the fluid to ensure carrier acceptance and safe delivery.

6. ACKNOWLEDGMENT:

A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS:

Fluid not conforming to this specification, or to modifications authorized by purchaser, will be subject to rejection.