

INCH-POUND
------------

MIL-DTL-25524E(USAF)

20 November 1997

SUPERSEDING

MIL-T-25524D(USAF)

8 April 1994

**DETAIL SPECIFICATION****TURBINE FUEL, AVIATION, THERMALLY STABLE**

This specification is approved for use by the Department of the Air Force and is available for use by all Departments and Agencies of the Department of Defense.

**1. SCOPE**

**1.1 Scope.** This specification was thoroughly reviewed as a part of acquisition reform. While most of the requirements were converted to performance terms, due to the military-unique nature of the product (see 6.1) and the need for compatibility with deployed systems, it was determined that not all requirements could be converted. The issuance of this specification as "detail" is not intended to constrain technology advances in future systems. This specification covers one grade of turbine fuel designated as JPTS (see 6.1).

**2. APPLICABLE DOCUMENTS**

**2.1 General.** The documents listed in this section are specified in *sections 3* and *4* of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements cited in *sections 3* and *4* of this specification, whether or not they are listed.

**2.2 Government documents**

**2.2.1 Specifications and standards.** The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the *Department of Defense Index of Specifications and Standards (DoDISS)* and supplement thereto, cited in the solicitation (see 6.2).

**SPECIFICATIONS****DEPARTMENT OF DEFENSE**

MIL-I-25017

Inhibitor, Corrosion/Lubricity Improver, Fuel Soluble (Metric)

MIL-I-85470

Inhibitor, Icing, Fuel System, High Flash, NATO Code Number S-1745

<p>Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: ASC/ENSI, Bldg 560, 2530 Loop Rd, West, Wright-Patterson AFB OH 45433-7101, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.</p>
--

AMSC N/A

FSC 9130

**DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.**

**MIL-DTL-25524E(USAF)****STANDARDS****FEDERAL**

FED-STD-791 Lubricants, Liquid Fuels, and Related Products; Methods of Testing

**DEPARTMENT OF DEFENSE**

MIL-STD-290 Packaging of Petroleum and Related Products

**QUALIFIED PRODUCTS LIST**

QPL-25017 Inhibitor, Corrosion/Lubricity Improver, Fuel Soluble

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Defense Automated Printing Service, 700 Robbins Avenue, Bldg 4D, Philadelphia PA 19111-5094.)

**2.3 Non-Government publications.** The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the *DoDISS* cited in the solicitation. Unless otherwise specified, the issue of documents not listed in the *DoDISS* are the issues of the documents cited in the solicitation (see 6.2).

**AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)**

ASTM D56	Standard Test Method for Flash Point by Tag Closed Tester
ASTM D86	Standard Test Method for Distillation of Petroleum Products
ASTM D93	Standard Test Methods for Flash Point by Pensky-Martens Closed Tester
ASTM D130	Standard Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test
ASTM D156	Standard Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)
ASTM D381	Standard Test Method for Existent Gum in Fuels by Jet Evaporation
ASTM D445	Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)
ASTM D1094	Standard Test Method for Water Reaction of Aviation Fuels (DoD adopted)
ASTM D1250	Standard Guide for Petroleum Measurement Tables
ASTM D1266	Standard Test Method for Sulfur in Petroleum Products (Lamp Method)
ASTM D1298	Standard Practice for Density, Relative Density (Specific Gravity), or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method (DoD adopted)
ASTM D1319	Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption
ASTM D1322	Standard Test Method for Smoke Point of Aviation Turbine Fuels
ASTM D2276	Standard Test Method for Particulate Contaminant in Aviation Fuel by Line Sampling (DoD adopted)
ASTM D2386	Standard Test Method for Freezing Point of Aviation Fuels
ASTM D2622	Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry
ASTM D2887	Standard Test Method for Boiling Range Distribution of Petroleum Fractions by Gas Chromatography (DoD adopted)
ASTM D3120	Standard Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry (DoD adopted)
ASTM D3227	Standard Test Method for Mercaptan Sulfur in Gasoline, Kerosene, Aviation Turbine, and Distillate Fuels (Potentiometric Method)
ASTM D3241	Standard Test Method for Thermal Oxidation Stability of Aviation Turbine Fuels (JFTOT Procedure)
ASTM D3242	Standard Test Method for Acidity in Aviation Turbine Fuel (DoD adopted)
ASTM D3338	Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
ASTM D3343	Standard Test Method for Estimation of Hydrogen Content of Aviation Fuels (DoD adopted)

**MIL-DTL-25524E(USAF)**

ASTM D3701	Standard Test Method for Hydrogen Content of Aviation Turbine Fuels by Low Resolution Nuclear Magnetic Resonance Spectrometry
ASTM D3828	Standard Test Methods for Flash Point by Setaflash Closed Tester (DoD adopted)
ASTM D3948	Standard Test Methods for Determining Water Separation Characteristics of Aviation Turbine Fuels by Portable Separometer (DoD adopted)
ASTM D4052	Standard Test Method for Density and Relative Density of Liquids by Digital Density Meter (DoD adopted)
ASTM D4057	Standard Practice for Manual Sampling of Petroleum and Petroleum Products
ASTM D4177	Standard Practice for Automatic Sampling of Petroleum and Petroleum Products (DoD adopted)
ASTM D4294	Standard Test Method for Sulfur in Petroleum Products by Energy - Dispersive X-Ray Fluorescence Spectroscopy (DoD adopted)
ASTM D4306	Standard Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination
ASTM D4529	Standard Test Method for Estimation of Net Heat of Combustion of Aviation Fuels
ASTM D4809	Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Intermediate Precision Method) (DoD adopted)
ASTM D4952	Standard Test Method for Qualitative Analysis for Active Sulfur Species in Fuels and Solvents (Doctor Test)
ASTM D5006	Standard Test Method for Measurement of Fuel System Icing Inhibitors (Ether Type) in Aviation Fuels
ASTM D5452	Standard Test Method for Particulate Contamination in Aviation Fuels by Laboratory Filtration
ASTM D5453	Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence
ASTM D5901	Standard Test Method for Freezing Point of Aviation Fuels (Automated Method)
ASTM D5972	Standard Test Method for Determination of Freezing Point of Aviation Fuels by Automatic Phase Transition Method
ASTM D6045	Color of Petroleum Products by the Automatic Tristimulus Method
ASTM E29	Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
ASTM E380	Standard for Use of International System of Units (SI)

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken PA 19428-2959; (610) 832-9500.)

**2.4 Order of precedence.** In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### **3. REQUIREMENTS**

**3.1 First article.** When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2.

**3.2 Materials.** Except as otherwise specified herein, the fuel shall consist completely of hydrocarbon compounds. Virgin, recycled, or reclaimed petroleum products may be used.

**3.3 Chemical and physical requirements.** The chemical and physical requirements of the finished fuel (hydrocarbon blend plus all additives listed herein) shall conform to the requirements listed in *section 3* and *table I*. Requirements contained herein are not subject to correction for test tolerances.

**3.3.1 Storage stability.** The finished fuel shall remain stable and conform to the requirements in *table I* for at least 1 year when tested in accordance with 4.5.3.

**3.4 Additives.** The type and amount of each additive used shall be reported (see 6.2e).

## MIL-DTL-25524E(USAF)

TABLE I. Chemical and physical requirements and test methods.

Requirements	Minimum	Maximum	ASTM Standard Test Methods
Color, Saybolt	+24		<sup>1</sup> D156 or D6045
Total acid number, mg KOH/g		0.015	D3242
Aromatics, volume percent	5.0	20.0	D1319
Sulfur, Mercaptan, mass percent <u>OR</u>		0.001	D3227
Doctor Test		negative	D4952
Sulfur, total, mass percent		0.3	D1266, D2622, D3120, <sup>1</sup> D4294, or D5453
Distillation temperature, °C (D2887 limits in parentheses)			<sup>1</sup> D86 or D2887
Initial boiling point	157 (105)		
10 percent recovered		193 (174)	
50 percent recovered		204 (207)	
90 percent recovered		238 (250)	
End Point		260 (288)	
Residue, volume percent (D86)		1.5	
Loss, volume percent (D86)		1.5	
Flash point, °C (°F)	43 (110)		D56, <sup>1</sup> D93, or <sup>2</sup> D3828
Density, kg/L (API) at 15°C	0.767 (53.0)	0.797 (46.0)	D1298 or <sup>1</sup> D4052
Freezing point, °C (°F)		-53 (-64)	<sup>1</sup> D2386, D5901 or D5972
Viscosity, centistokes, at -40°C		12.0	D445
Net heat of combustion, MJ/kg (BTU/lb)	42.8 (18,400)		D3338, D4529, or <sup>3</sup> D4809
Hydrogen content, mass percent <u>OR</u>	14.00		D3343 or <sup>1</sup> and <sup>4</sup> D3701
Smoke point, mm	25.0		D1322
Copper strip corrosion, 2 hr at 100°C		1b	D130
Thermal stability (JFTOT)			
JFTOT TDR, max		12	<sup>5</sup> D3241
JFTOT mm Hg pres. diff., max		25	<sup>5</sup> D3241
Existent gum, mg/100 mL		5.0	<sup>6</sup> D381

## MIL-DTL-25524E(USAF)

TABLE I. Chemical and physical requirements and test methods - Continued.

Requirements	Minimum	Maximum	ASTM Standard Test Methods
Particulate matter, mg/L			<sup>7</sup> D2276 or <sup>7</sup> D5452
Origin		0.3	
Destination		0.5	
Water reaction			<i>D1094</i>
Interface rating		lb	
Water separation characteristics	Report		<i>D3948</i>
Additives			
JFA-5, mg/L	8.6	11.4	
Metal deactivator	Report conc. and Type		
Antioxidant, ppm by weight	Report conc. and Type		
Fuel system icing inhibitor, vol percent	0.10	0.15	<sup>8</sup> D5006
Corrosion inhibitor/lubricity improver	<sup>9</sup>	<sup>9</sup>	

<sup>1</sup> Referee Test Method<sup>2</sup> ASTM D56 may give results up to 1°C (2°F) below the ASTM D93 results. ASTM D3828 may give results up to 1.7°C (3°F) below the ASTM D93 results.<sup>3</sup> For calculating the net heat of combustion using ASTM D3338, the average distillation temperature shall be calculated as follows, when the distillation is performed using ASTM D2887:

$$V = \frac{10\% + 50\% + 90\%}{3}$$

<sup>4</sup> For calculating the hydrogen content using ASTM D3343, the average distillation temperature shall be calculated as follows when the distillation is performed using ASTM D2887:

$$V = \frac{10\% + 50\% + 90\%}{3}$$

<sup>5</sup> See 4.5.2.1 for the JFTOT procedures and rating procedures.<sup>6</sup> If air is used instead of steam while performing ASTM D381, it must be reported. In case of a failure with air, the sample must be retested using steam.<sup>7</sup> A minimum sample size of 3.785 liters (1 gallon) shall be filtered.<sup>8</sup> Test shall be performed in accordance with ASTM D5006 or method 5327, 5340, or 5342 of FED-STD-791. Use the appropriate scale of the refractometer.<sup>9</sup> See 3.4.5.

**3.4.1 Antioxidants.** Immediately after processing and before the fuel is exposed to the atmosphere, an approved antioxidant shall be added to prevent the formation of gums and peroxides after manufacture. The concentration of antioxidant to be added shall be as follows:

- a. Not less than 17 mg nor more than 24 mg of active ingredient per liter of fuel (6.0 to 8.4 pounds of active ingredient per 1,000 barrels of fuel) to all JPTS fuel that contains hydrogen treated blending stocks.
- b. At the option of the supplier, not more than 24 mg of active ingredient per liter of fuel (8.4 pounds of active ingredient per 1,000 barrels of fuel) may be added to the JPTS fuel that does not contain hydrogen treated blending stocks.

**3.4.1.1 Approved antioxidants.** The following antioxidant formulations are approved:

- a. 2,6-ditertiary butyl-4-methylphenol
- b. 2,4-dimethyl-6-tertiary butylphenol
- c. 2,6-ditertiary butylphenol
- d. 75 percent minimum 2,6-ditertiary butylphenol  
25 percent maximum tertiary and tritertiary butylphenols
- e. 72 percent minimum 2,4-dimethyl-6-tertiary butylphenol  
28 percent maximum monomethyl and dimethyl tertiary butylphenol.

**MIL-DTL-25524E(USAF)**

**3.4.2 Metal deactivator.** A metal deactivator, N,N'-disalicylidene-1,2-propandiamine or N,N'-disalicylidene-1,2-cyclohexanediamine, may be blended into the fuel in an amount not to exceed 5.7 mg of active ingredient per liter of fuel (2 pounds of active ingredient per 1,000 barrels of fuel). Metal deactivator additive shall not be used in JPTS unless the supplier has obtained written consent from the Procuring Activity and user.

**3.4.3 Fuel system icing inhibitor.** The use of a fuel system icing inhibitor shall be mandatory. The icing inhibitor shall be in accordance with *MIL-I-85470*. The point of injection of the additive and the type of the additive shall be determined by agreement between the purchase authority and the supplier.

**3.4.4 Special additive.** The fuel shall contain from 8.6 to 11.4 mg/L of fuel (3 to 4 pounds/1,000 barrels of fuel) of Octel America JFA-5® additive.

**3.4.5 Corrosion inhibitor/lubricity improver additive.** A corrosion inhibitor/lubricity improver additive qualified for JPTS and conforming to *MIL-I-25017* shall be blended into the fuel by the supplier. The amount added shall be equal to or greater than the minimum effective concentration and shall not exceed the maximum allowable concentration listed in the latest revision of *QPL-25017*. The supplier or transporting agency, or both, shall maintain and upon request make available to the Government evidence the corrosion inhibitor/lubricity improver additive used is equal in every respect to the qualified products listed on *QPL-25017*.

**3.4.5.1 Approved corrosion inhibitor/lubricity improver additives.** The following corrosion inhibitor/lubricity improver additives qualified for JPTS on *QPL-25017* are:

- a. HITEC 580®
- b. NALCO/EXXON 5403®
- c. MOBILAD F800®
- d. IPC 4410®
- e. IPC 4445®
- f. TOLAD 3220®
- g. PETROLITE NC-351®

**3.4.6 Premixing of additives.** Additives shall not be premixed with other additives before injection into the fuel so as to prevent possible reactions among the concentrated forms of different additives.

**3.5 Workmanship.** At the time of Government acceptance, the finished fuel shall be clear, bright, and visually free from undissolved water, sediment, or suspended matter. In case of dispute, the fuel shall be clear and bright at 21°C (70°F) and meet the *table I* particulate matter requirement.

## **4. VERIFICATION**

**4.1 Classification of inspections.** The inspection requirements specified herein are classified as follow:

- a. First article inspection (see 4.2).
- b. Conformance inspection (see 4.3).

**4.2 First article inspection.** Test requirements of 3.3.1 shall be complied with prior to bid on any product required under this specification. This test shall be conducted in accordance with 4.5.3.

**4.2.1 Sample.** One 208-liter (55-gallon) drum of fuel from the first batch that represents the product offered to the Government under any contract shall be forwarded to AFRL/PRSF, Bldg 490, 1790 Loop Road N, Wright-Patterson AFB OH 45433-7103. Test data that show the results of tests required by 3.3 and 3.3.1 performed on products produced or blended in an identical manner to the batch sample shall accompany the 208-liter (55-gallon) sample forwarded under each contract. The Government will perform tests as necessary to confirm or validate the contractor's test results. Failure of the storage stability test will render the contractor ineligible for further contract award, pending assurance by the supplier to the satisfaction of the Air Force Research Laboratory's Fuels Branch (AFRL/PRSF) that any future product will meet the storage stability requirement. The storage stability test must then be repeated on the improved product to prove that the product is totally acceptable.

**MIL-DTL-25524E(USAF)**

**4.3 Conformance inspection.** Test for the acceptance of individual lots shall consist of tests for all requirements specified in *section 3*, except storage stability. Quality conformance inspection shall include the test requirement herein. Contractor shall send a 7.08 liter (2 gallon) sample of each batch of fuel produced under any contract to a designated acquisition activity laboratory for acceptance testing.

**4.3.1 Inspection lot.** For acceptance purposes, individual lots shall be examined as specified herein and subjected to tests for all requirements cited in *section 3*.

**4.3.2 Sampling plans**

**4.3.2.1 Sampling for verification of product quality.** Each bulk or packaged lot (see 6.5) of material shall be sampled for verification of product quality in accordance with *ASTM D4057* or *ASTM D4177*, or both, except where individual test procedures contain specific sampling instructions.

**4.3.2.1.1 Sample containers.** A number of jet fuel properties are very sensitive to trace contamination that can originate from sample containers. Refer to *ASTM D4306* for recommended sample containers.

**4.3.2.2 Sampling for examination of filled containers for delivery.** A random sample of filled containers shall be selected from each lot. The samples shall be examined in accordance with *4.5.1.3*.

**4.3.2.3 Special samples.** One 208-liter (55-gallon) drum of fuel from the first production lot that represents the product offered to the Government under an initial contract will be forwarded to the Air Force Research Laboratory at AFRL/PRSF, Bldg. 490, 1790 Loop Rd N, WPAFB OH 45433-7103. Test data that shows the results of tests required by 3.3 shall accompany the 208-liter (55-gallon) sample. The Government will perform tests as necessary to confirm or validate the company's test results. A complete report of analysis shall be forwarded to the same address for all lots of fuel product under any Government contract. Failure of any tests conducted within 12 months after receipt of the fuel sample shall render the contractor ineligible for further contract award, pending verification of the quality of the product to the satisfaction of the acquisition activity.

**4.3.3 Inspection.** Inspection shall be performed in accordance with *method 9601* of *FED-STD-791*.

**4.3.4 Batch sample.** AFRL/PRSF reserves the right to have a 18.9-liter (5-gallon) sample of each batch of fuel produced under any contract forwarded to AFRL/PRSF, Bldg 490, 1790 Loop Road N, Wright-Patterson AFB OH 45433-7103. This sample will be stored at Wright-Patterson AFB and will represent a retained sample from each batch of fuel produced. All specification tests may be performed any time within 12 months from date of manufacture. Failure of any test will render the contractor ineligible for further contract award, pending verification of the quality of the product to the satisfaction of Air Force Research Laboratory's Fuels Branch (AFRL/PRSF). The contracting officer and contractor will be promptly advised of any failures.

**4.4 Inspection conditions.** Requirements contained in *table I* are absolute, as defined in *ASTM E29*, and shall not be subject to correction for test tolerances. If multiple determinations are made, results falling within any specified repeatability and reproducibility tolerances may be averaged. For rounding off of significant figures, *ASTM E29*, absolute method, shall apply to all tests required by this specification.

**4.5 Methods of inspection**

**4.5.1 Examination of product**

**4.5.1.1 Visual inspection.** Samples selected in accordance with *4.3.1* shall be visually examined for compliance with 3.5.

**4.5.1.2 Examination of empty containers.** Before filled, each empty unit container shall be visually inspected for cleanliness and suitability in accordance with *ASTM D4057*.

**4.5.1.3 Examination of filled containers.** Samples taken as specified in 4.3.2 shall be examined for conformance to *MIL-STD-290* with regard to fill, closure, sealing, leakage, packaging, packing, and markings. Any container with one or more defects under the required fill shall be rejected.



**MIL-DTL-25524E(USAF)**

**4.5.2 Chemical and physical tests.** To determine conformance to chemical and physical requirements (see 3.3) tests shall be conducted in accordance with the applicable test methods (*FED-STD-791* or *ASTM*), listed in *table I*, except for those specified herein.

**4.5.2.1 Thermal stability.** The thermal stability test shall be conducted using *ASTM D3241* (JFTOT). The heater tube shall be rated using the Alcor Mark 8A or Alcor Mark 9 Tube Deposit Rater (TDR) (see 4.5.2.1.2a).

**4.5.2.1.1 Stability test conditions.**

- a. Heater tube temperature at maximum point: 335°C (635°F)
- b. Fuel system pressure: 3.43 MPa (500 pounds/square inch of gravity)
- c. Fuel flow rate: 3.0 milliliter/minute
- d. Test duration: 150 minutes.

**4.5.2.1.2 Stability test results.** The fuel sample is acceptable, if all the following criteria are met:

- a. The maximum differential between the post-test and pre-test Alcor Mark 8A or Mark 9 TDR rating does not exceed 12 TDR units. Both before and after the JFTOT test, the heater tube shall be rated at 1 millimeter (mm) increments over the length of the heater tube that can be rated using the Alcor Mark 8A or Mark 9 TDR. The maximum increase in the TDR ratings (i.e., the maximum difference seen between the post-test and the pre-test TDR rating) shall be reported. If the maximum increase in TDR rating does not exceed 12 TDR units, the results are satisfactory.
- b. The maximum differential pressure across the test filter does not exceed 25 mm of mercury.

**4.5.2.1.3 Reported data.** The following data shall be reported.

- a. Tube deposit TDR ratings.
- b. Differential pressure across the test filter.

**4.5.3 Storage stability.** The storage stability test on the finished fuel shall be conducted by placing  $200 \pm 3.8$  liters ( $53 \pm 1$  gallons) in a 208-liter (55-gallon), 18-gauge DOT 17E uncoated steel drum. The filled drum shall be stored at 54.5°C (130°F) for 1 year (12 months). At 3-month intervals, samples shall be withdrawn and subjected to the thermal stability test (see 4.5.2.1). At the conclusion of the 12-month storage stability test, the fuel will be subjected to all test requirements of *table I*. If the fuel fails any of the 3-month thermal stability tests, the fuel shall be resampled and retested to insure the initial sample was valid. Failure of the thermal stability test at any of the 3-month intervals or failure of any of the *table I* test requirements at the conclusion of the 12-month storage stability test constitutes a failure of the storage stability test (4.3.2.3). The Air Force Research Laboratory Fuel Branch (AFRL/PRSF), Bldg 490, 1790 Loop Road N, Wright-Patterson AFB OH 45433-7103, will conduct this test.

**4.6 Test report.** Test data required by 4.5.2 shall be reported in the same order as listed in *table I*, unless directed otherwise by the Procuring Activity.

## **5. PACKAGING**

**5.1 Packaging.** For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.



**MIL-DTL-25524E(USAF)****6. NOTES**

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

**6.1 Intended use.** The fuel covered by this specification is intended for use in aircraft turbine engines (see *1.1*).

**6.2 Acquisition requirements.** Acquisition documents must specify the following:

- a. Title, number, and date of the specification.
- b. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see *2.2.1* and *2.3*).
- c. Packaging requirements (see *5.1*).
- d. Quantity required and size containers desired.
- e. Location, injection method, and type of additives, as required.
- f. One copy of the certificate of analysis that lists those items in table I should be forwarded to the acquisition activity and the following organization for each batch of fuel acquired under this specification:

AFRL/PRSF, Bldg 490  
1790 Loop Rd N  
Wright-Patterson AFB OH 45433-7103.

- g. The acquisition activity shall state if the contractor is to be required to submit a 208-liter (55-gallon) drum of fuel, or a sample acceptable to the Air Force Research Laboratory (AFRL/PRSF) (see *4.3.2.3*).

**6.3 Conversion of metric units.** Units of measure have been converted to the International System of Units (Metric) in accordance with *ASTM E380*. If test results are obtained in units other than Metric or there is a requirement to report dual units, *ASTM E380* or *ASTM D1250, Volume XI/XII*, should be used to convert the units.

**6.4 Material Safety Data Sheets.** Contracting Officers will identify those activities which require copies of completed Material Safety Data Sheets prepared in accordance with *FED-STD-313*. The pertinent Government mailing addresses for submission of data are listed in *FED-STD-313*.

**6.5 Definitions**

**6.5.1 Bulk lot.** A bulk lot consists of an indefinite quantity of a homogeneous mixture of material offered for acceptance in a single isolated container, or manufactured in a single plant run, through the same processing equipment, with no change in ingredient material.

**6.5.2 Packaged lot.** A packaged lot consists of an indefinite number of 208-liter (55-gallon) drums or smaller unit packages of identical size and type, offered for acceptance, and filled from the isolated tank that contains a homogeneous mixture of material; or filled with a homogeneous mixture of material manufactured in a single plant run, through the same processing equipment, with no change in ingredient material.

**6.6 Subject term (key word) listing**

additive  
antioxidant  
corrosion inhibitor  
deactivator  
flash point  
fuel system icing inhibitor  
jet fuel  
lubricity improver

**MIL-DTL-25524E(USAF)**

**6.7 Changes from previous issues.** Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes. The changes are due to Acquisition Reform initiatives requiring Government specifications to be performance-based. These changes have no impact on the chemical, physical, or performance requirements with respect to the previous issue.

Custodian:  
Air Force - 11

Preparing activity:  
Air Force - 11

Review activity:  
Air Force - 68

(Project 9130-1067)

# STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

## INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.  
NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

### I RECOMMEND A CHANGE:

#### 1. DOCUMENT NUMBER

MIL-DTL-25524E(USAF)

#### 2. DOCUMENT DATE (YYMMDD)

971120

### 3. DOCUMENT TITLE

TURBINE FUEL, AVIATION, THERMALLY STABLE

### 4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

### 5. REASON FOR RECOMMENDATION

### 6. SUBMITTER

#### a. NAME (Last, Middle Initial)

#### b. ORGANIZATION

#### c. ADDRESS (include Zip Code)

#### d. TELEPHONE (Include Area Code)

(1) Commercial

#### e. DATE SUBMITTED (YYMMDD)

(2) AUTOVON  
(If applicable)

### 8. PREPARING ACTIVITY

#### a. NAME

ASC/ENSI  
AF CODE 11

#### b. TELEPHONE (Include Area Code)

(1) Commercial  
(937) 255-0175

(2) AUTOVON  
785-0175

#### c. ADDRESS (Include Zip Code)

2530 LOOP ROAD WEST  
WRIGHT-PATTERSON AFB OH 45433-7101

#### IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:

Defense Quality and Standardization Office  
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466  
Telephone (703) 756-2340 AUTOVON 289-2340