

QUALITY ASSURANCE PROVISIONS // FAT / PLT @ contractors facility

NSN2840-01-067-0125

P/N (99207) 6029T27G03

NOMEN. T-58 Front Oil jet

Articles to be furnished hereunder shall be manufactured, tested and inspected in accordance with drawing 6029T27G03 Revision level "E" latest revision and all details and specifications referenced therein.

I. Quality/Inspection Requirements

- A. MIL-I-45208 or ISO 9000 equivalent applies:
- B. First Article Testing applies:
- C. Mandatory Inspection applies: Refer to contract section C.
- D. Production Lot Testing Applies
- E. Site Survey may be required
- F. Pre-Award Survey required

II. Supplemental Requirements

- A. Additionally, para. 3.1-3.5, 5.1-5.2, 6.1-6.2 of MIL-Q-9858 or ISO 9000 equivalent apply.
- B. The contractor shall identify on the process/operation sheets all manufacturing sources performing processes/operations outside of their facilities. These sheets shall not be revised or altered after the successful completion of First Article and/or Production Lot Testing without approval from the Engineering Support Activity (ESA), via the PCO.
- C. The Inspection Method Sheets which list the characteristics of each item produced under the contract shall have serial number traceability to the raw material, casting, or forging. In addition, the contractor is responsible for providing completed inspection method sheets showing the actual dimensions taken
- D. Markings should be in accordance with MIL-STD-130 Rev. "K" paragraph 5.3.3(a), (b), (c), and (g). Method and location shall be in accordance with the drawing.

Amendment to Quality Assurance Requirements for:

*2840-01-067-0125
(99207) 6029T27G03
T-58 Front Oil Jet*

DRAWING ZONE F-11: INDICATES THAT FOR PART NUMBER 6029T27G03 -10 SHALL BE MARKED ON THE AREA SHOWN PER METHOD 2D1

ALTHOUGH NOT INDICATED ON PRINT 6029T27G03 REVISION LEVEL "E", NAVAIR/NAVICP/NADEP REQUIRES THAT THE MANUFACTURER MARK THE PART WITH: PART NUMBER / PRIME IDENT NUMBER [CAGE] AND MANUFACTURER IDENT NUMBER [CAGE].

III. Mandatory Inspection Requirements

During production, mandatory inspection is required to be accomplished by the contractor, as follows:

A. Level of Inspection (LOI):

- 1) Critical Characteristics: 100% inspection shall apply.
- 2) Major and Minor Characteristics - LOI shall be in accordance with a sampling plan acceptable to the QAR.

B. Critical Characteristics:

1. NOTE 5: All holes must be completely free of burrs and chips.
2. NOTE 7: Flow check with MIL-PRF-7024E Calibration fluid (supersedes MIL-C-7024D) at room temperature with 22.0 PSIG at jet inlet and all jets flowing. See table (B6)
3. Drawing zone E-7: 42°30' / 41°30'
4. Drawing zone E-9: 56°30' / 55°30'
5. Drawing zone E-11: 130° 30' / 129°30'
6. Drawing zone F-11: 25° 24° Jet -C- Position -L- .005R /Section H-H

C. Major and Minor Characteristics:

- 1) Shall be defined by the contractor subject to QAR concurrence, unless defined on applicable drawings and associated specifications.

IV. Unless expressly provided for elsewhere in this Clause, equipment such as fixtures, jigs, dies, patterns, templates, mylars, special tooling, test equipment, or any other manufacturing aid required for the manufacture and/or testing of the subject items will not be provided by the Government or any other source and is the sole responsibility of the contractor. The foregoing applies notwithstanding any reference to such equipment or the furnishing thereof that may be contained in any drawing

FIRST ARTICLE TESTS REQUIRED (Government Testing at the contractors facility)

I. First Article Inspection/Test Criteria:

The tests to be performed under the First Article approval clause of the contract are:

- A. Dimensional Check 100 % of finished part
- B. Form / Fit
- C. Compliance with all drawings, and specifications referenced therein.
- D. **Review documentation as provided under DD 1423 requirements.**

In addition to the above tests, the First Articles to be inspected hereunder shall also be subjected to those tests which will demonstrate that the articles comply with contract requirements.

The contractor shall be responsible for providing necessary parts and repair of the First Article (s) during testing.

The contractor shall be responsible for providing necessary parts and repair of the First Article Sample (s) during testing.

II. Special Instructions:

Sample (s) may be considered as production items under the contract provided the sample(s) can be refurbished to ready for issue (RFI) condition and provided the sample(s) have inspection approval of the cognizant QAR. Sample(s) may be shipped as production items only after all other units required under the contract have been produced and are ready for shipment.

Notification of Shipment of Material For Government Testing:

A. Fourteen (14) days prior to inspection of First Article Sample (s) the contractor shall notify the designated test facility, in writing of the anticipated inspection date, with an information copy to the PCO, ACO, and QAR. The contractor shall also arrange for preliminary inspection of test samples by the CAO/QAR.

The contractor shall notify the Contracting Officer as well as NAVICP as soon as the First Article Sample is available for dimensional inspection so that these commands can contact the cognizant NADEP

FIRST ARTICLE APPROVAL (GOVERNMENT TESTING @ KTRS PLANT)

- A. The contractor shall present two (2) units of lot / item 001 within 200 days from the date of this contract

A TEAM FROM the NADEP QUALITY ASSURANCE, AND E & E, ALONG WITH PERSONNEL FROM NAVICP PHILADELPHIA CODE 0733.3 SHALL WITNESS THE DIMENSIONAL INSPECTION AT THE CONTRACTORS PLANT. A COMPLETE 100% DIMENSIONAL INSPECTION SHALL BE PERFORMED AND ALL MANUFACTURING DOCUMENTATION SHALL BE REVIEWED.

Marking of test sample:

“FOR FIRST ARTICLE TESTING. NOT FOR RFI, DO NOT TAKE UP IN STOCK”. CONTRACT NUMBER:

- A. For First Article Test, the shipping documentation shall contain this contract number and the lot/item identification. The characteristics that the First Article must meet and the testing requirements that are specified elsewhere in this contract.

B. If the First Article is disapproved, the contractor, upon Government request, shall submit an additional First Article for testing. After each request, the contractor shall make any necessary changes, modification, or repairs to the First Article or select another First Article for testing. All costs related to these tests are to be borne by the contractor, including any and all costs for additional tests following a disapproval. The contractor shall furnish any additional First Article to the Government under the terms and conditions and within the time specified by the Government.

The government shall act of this First Article within the time limit specified in paragraph” B” above. The government reserves the right to require an equitable adjustment of the contract price for any extension of the delivery schedule or for any additional costs to the Government related to these tests.

- C. If the contractor fails to PROVIDE any First Article on time, or the contracting officer disapproves any First Article, the contractor shall be deemed to have failed to make delivery within the meaning of the default clause of this contract.

D. Unless otherwise provided in the contract, and if the approved First Article is not consumed or destroyed in testing, the contractor-

1) May deliver the approved First Article as part of the contract quantity if it meets all contract requirements for acceptance.

2) Shall remove and dispose of any First Article from the government test facility at the contractor's expense.

E If the Government does not act within the time specified in paragraph B or C above, the contracting officer shall, upon timely written request from the contractor, equitably adjust under the changes clause of this contract the delivery or performance dates and/or the contract price, and any other contractual term affected by the delay.

F. Before First Article approval, the acquisition of materials or components for, or the commencement of production of, the balance of the contract quantity is at the sole risk of the contractor. Before First Article approval, the costs thereof shall not be allocable to this contract for 1) progress payments, or 2) termination settlements if the contract is terminated for the convenience of the Government.

G The contractor shall produce both the First Article and the production quantity at the same facility and shall submit a certification to this effect with each First Article.

H. The contractor shall provide specific written notification to the procuring contractor officer informing him/her of the shipment of any articles furnished in accordance with this clause. Such notification must be addressed to the attention of the ACO with copies to the testing activity. Failure to provide such notification shall excuse the government from any delay in performing First Article Testing and informing the contractor of the results thereof.

**PRODUCTION LOT TESTING REQUIREMENTS
[WITNESSED AND ACCEPTED AT THE CONTRACTORS FACILITY]**

The material produced under contract shall be accepted by the cognizant CAO/QAR upon the successful completion of these requirements.

THE PRODUCTION LOT INSPECTION SHALL BE PERFORMED AT THE CONTRACTORS FACILITY WITNESSED AND ACCEPTED BY THE DCMA/QAR. A LETTER OF FINDINGS SHALL BE FORWARDED TO THE DEFENSE SUPPLY CENTER PCO.

I. Production Lot Test Requirements

A. The cognizant CAO/QAR shall select two (2) item (s) at random from the production lot. In addition the QAR shall select one (1) item (s) at random from each successive lot or portion thereof.

B. Production Lot Testing to be completed during production after First Article Approval.

C. Sample (s) are to be unpainted. Corrosive areas to be coated with a light preservative.

II. The tests to be performed under the Production Lot Sample testing provisions of the contract are:

A. Compliance with drawings and all specification referenced therein.

B. Dimensional Check

In addition to the above tests, the Production Lot Sample(s) to be delivered hereunder shall also be subjected to those tests which will demonstrate that the sample(s) comply with contract requirements.

III. Testing location

A. The Production Lot inspection shall be performed at the contractor's plant, by the contractor and witnessed and accepted by the DCMC/QAR. Within fifteen (15) days of completion of Production Lot Testing the CAO/QAR shall prepare and submit two (2) copies of their test report with conclusions and recommendations to the Contracting Officer All 1423 requirements apply.

B Sample(s) may be considered as production items under the contract provided sample(s) can be refurbished to ready For Issue (RFI) condition and provided sample(s) have inspection approval of the cognizant DCMC. Sample(s) may be shipped as production items only after all other units required under the contract have been produced and are ready for shipment.

PRODUCTION LOT TESTING (CONTRACTOR TESTING)

A. If the contractor fails to provide any Production Lot Samples for testing within the time or times specified, or if the contracting officer disapproves any Production Lot Samples, the contractor shall be deemed to have failed to make delivery within the meaning of the default clause of this contract, and this contract shall be subject to termination for default.

B. In order for a Production Lot to be acceptable, all samples representative of the lot must pass all the contract requirements. In the event a sample fails to pass such requirements, the lot will be rejected. In such event, the government may, at its option and at no additional cost to the government, (I) terminate all or any portion of this contract for default, (II) require the manufacture of a new Production Lot, or a rework of the rejected Production Lot if the means and procedures by the contractor for rework are acceptable to the government, or (III) require the submission of additional samples for test. The foregoing procedures shall apply to new or reworked Production Lots in the same way as they did to the original Production Lot.

C. For each additional sample or each resubmission of a modified sample which the contractor is required to submit for approval hereunder as a result of a failure of a previous sample to conform to the requirements of the specification, the contractor shall pay to the government the costs of reinspection, examination and retesting and the contractor and his sureties (if any) shall be liable for the amount of such costs.

D. Nothing contained in the foregoing provisions of this clause and no action of the government in accordance herewith, shall in any way prejudice the right of the government under the clause of this contract entitled Default.

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to the above address. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.	B. EXHIBIT	C. CATEGORY: TDP <input type="checkbox"/> TM <input type="checkbox"/> OTHER <input type="checkbox"/>
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D. SYSTEM/ITEM 01-067-0125	E. CONTRACT/PR NO.	F. CONTRACTOR
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1. DATA ITEM NO. 1	2. TITLE OF DATA ITEM CERTIFICATION DATA REPORT	3. SUBTITLE COMPLETE PROCESS OPERATION SHEETS	17. PRICE GROUP
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4. AUTHORITY (Data Acquisition Document No.) DI-MISC-80678/T1	5. CONTRACT REFERENCE	6. REQUIRING OFFICE DEFENSE SUPPLY CENTER	18. ESTIMATED TOTAL PRICE
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7. DD250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY AS REQ.	12. DATE OF FIRST SUBMISSION SEE BLOCK # 16	14. DISTRIBUTION	
8. ADP CODE A		11. AS OF DATE AS REQ.	13. DATE OF SUBSEQUENT SUBMISSION SEE BLOCK # 16	a. ADDRESSEE	b. COPIES

16. REMARKS PARA. 10.1,10.2,10.2.1,10.2.2,10.2.4,10.5 *UPON SUBMISSION OF FIRST ARTICLE/PRODUCTION LOT TEST SAMPLE (S) ** IF PROCESS OPERATION SHEETS CHANGE AFTER SUCCESSFUL COMPLETION OF FAT/PLT	DCMC/ACO	1/0	
	DCMC/QAR	1/0	
	PCO	1/0	
	DADED	1/0	
	15. TOTAL	4/0	

1. DATA ITEM NO. 2	2. TITLE OF DATA ITEM CERTIFICATION DATA REPORT	3. SUBTITLE COMPLETE INSPECTION METHOD SHEETS	17. PRICE GROUP
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4. AUTHORITY (Data Acquisition Document No.) DI-MISC-80678/T2	5. CONTRACT REFERENCE	6. REQUIRING OFFICE DEFENSE SUPPLY CENTER	18. ESTIMATED TOTAL PRICE
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED	10. FREQUENCY AS REQ.	12. DATE OF FIRST SUBMISSION SEE BLOCK # 16	14 DISTRIBUTION	
8. ADP CODE A		11. AS OF DATE AS REQ.	13. DATE OF SUBSEQUENT SUBMISSION SEE BLOCK #16	a. ADDRESSEE	b. COPIES

16. REMARKS PARA. 10.1,10.2,10.2.1,10.2.2,10.2.4,10.5 *UPON SUBMISSION OF FIRST ARTICLE/PRODUCTION LOT TEST SAMPLE (S) ** AT TIME OF CONTRACT COMPLETION	DCMC/ACO	1/0	
	DCMC/QAR	1/0	
	PCO	1/0	
	DADED	1/0	
	15. TOTAL	4/0	

G. PREPARED BY NAVICP-P	H. DATE 11 March 2002	I. APPROVED BY NAVICP-P	J. DATE 11 March 2002
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INCH-POUND

MIL-PRF-7024E

1 Oct 1997

Superseding

MIL-C-7024D

30 August 1990

**PERFORMANCE SPECIFICATION
CALIBRATING FLUIDS, AIRCRAFT FUEL SYSTEM COMPONENTS**

This specification has been approved for all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for three types of calibrating fluid used in the calibration of aircraft fuel system components.

1.2 Classification. The fluids will be of the following types as specified (6.2):

- Type I - Normal Heptane
- Type II - Special Run Stoddard Solvent
- Type III - High Flash Point Fluid

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 those identified as 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 the requirements of the specified documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government Documents.

2.2.1 Specifications, Standards, and Handbooks. The following specifications, standards, and handbooks 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

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to SA-ALC/SFSP, 1014 Billy Mitchell Blvd./Ste 1, Kelly AFB TX 78241-5603, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 6850

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

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 issues of documents not listed in the DoDISS are the issues of the non-Government documents which are current on the date of the solicitation.

American Society for Testing and Materials (ASTM)

- ASTM D 56 - Test Method for Flash Point by Tag Closed Tester (DoD adopted)
- ASTM D 86 - Method for Distillation of Petroleum Products (DoD adopted)
- ASTM D 130 - Methods for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test (DoD adopted)
- ASTM D 156 - Test Method for Saybolt Color of Petroleum products (Saybolt Chronometer Method) (DoD adopted)
- ASTM D 323 - Test Method for Vapor Pressure of Petroleum Products (Reid Method) (DoD adopted)
- ASTM D 381 - Test Method for Existent Gum in Fuels by Jet Evaporation (DoD adopted)
- ASTM D 445 - Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity) (DoD adopted)
- ASTM D 873 - Test Method for Oxidation Stability of Aviation Fuel (Potential Residue Method) (DoD adopted)
- ASTM D 1093 - Test Method for Acidity of Distillation Residues or Hydrocarbon Liquids (DoD adopted)
- ASTM D 1298 - Test Method for Density, Relative Density, (Specific Gravity), or API Gravity of Crude Petroleum Petroleum Products by Hydrometer Method (DoD adopted)
- ASTM D 1319 - Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption (DoD Adopted)
- ASTM D 2276 - Test Method for Particulate Contaminant in Aviation Turbine Fuels (DoD adopted)
- ASTM D 2386 - Test Method for Freezing Point of Aviation Fuels (DoD adopted)
- ASTM D 3227 - Test Method for Mercaptan Sulfur in Gasoline, Kerosene, Aviation Turbine, and Distillate Fuels (Potentiometric Method) (DoD adopted)
- ASTM D 3242 - Test Method for Total Acidity in Aviation Turbine Fuel (DoD adopted)

- ASTM D 3606 - Test Method for Determination of Benzene and Toluene in Finished Motor and Aviation Gasoline by Gas Chromatography
- ASTM D 4052 - Test Method for Density and Relative Density of Liquids by Digital Density Meter (DoD adopted)
- ASTM D 4057 - Practice for Manual Sampling of Petroleum and Petroleum Products (DoD adopted)
- ASTM D 4952 - Test Method for Quantitative Analysis for Active Sulfur Species in Fuels and Solvents (Doctor Test)
- ASTM D 5972 - Test Method for Freezing Point of Aviation Fuels (Automatic Phase Transition Method)
- ASTM E 29 - Recommended Practice for Indicating Which Places of Figures are to be Considered Significant in Specified Limiting Values (DoD adopted)

(Application for copies of ASTM documents should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959).

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

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.

TABLE I. Chemical and Physical Requirements and Test Methods.

REQUIREMENTS	Type I	Type II	Type III	ASTM Test Method
Specific Gravity, 15.6°C/15.6°C (60°F/60°F)	0.699 ±0.002	0.770 ±0.005	0.780 ±0.005	D 1298 D 4052
Color, Saybolt, Lighter Than	+25		+25	D 156
Viscosity, Centistokes at 0°C (32°F)	0.785 ±0.01			D 445
25°C (77°F)		1.17 ±0.05		
37.8°C (100°F)	0.54 ±0.01		2.47 ±0.10	
Vapor Pressure at 37.8°C (100°F), kPa (psi) Max	13.8 (2.0)			D 323
Existent Gum, mg/100ml Max	2.0	5.0		D 381 1/
Potential Gum, mg/100ml Max	5.0			D 873 2/
Distillation: Initial BP °C (°F) Min		149(300)	216(420)	D 86
Recovered 10% °C (°F)			3/	
Recovered 50% °C (°F)			221-232 (430- 450)	
Recovered 90% °C (°F)			3/	

TABLE I. Chemical and Physical Requirements and Test Methods(cont).

Final Boiling Point °C (°F)		210 (410) Max	232-246 (450-475)	
Recovery, Percent Min		98.5		
Range, 5 to 95% points °C (°F)	1.7 (3) 4/			
Residue, Volume %, Max			1.5	
Loss, Volume %, Max			1.5	
Flash Point, °C(°F), Min		38 (100)	79 (175)	D 56
Aromatics, Vol %, Max		20.0		D 1319
Benzene, Vol %, Max	0.01	0.01	0.01	D 3606
Olefins, Vol %, Max		5.0		D 1319
Particulate Matter, mg/l, Max		2.0		D 2276
Mercaptan Sulfur, %Wt, Max or Doctor Test		0.001 Sweet		D 3227 D 4952
Copper Corrosion, Max	No. 1	No. 1	No. 1	D 130
Total Acid Number, mg/l, Max		0.015		D 3242
Freezing Point, °C(°F), Max			-54 (-65)	D 2386 D 5972
Acidity, Distillation Residue, Max			Neutral	D 1093

1/ Air Jet Method

2/ 5-Hour Aging Period

3/ To Be Reported-Not Limited

4/ Must Include Temperature of 98°C(208°F)

3. REQUIREMENTS

3.1 Materials. The fluids shall consist completely of hydrocarbon compounds, except as otherwise specified herein.

3.2 Chemical and Physical Requirements. The product shall conform to the requirements as specified in Table I. Requirements in Table I are absolute and not subject to correction for tolerance of test methods. The finished calibrating fluid shall be homogenous, visually free from water, sediment, or suspended matter and shall be clear and bright at the ambient temperature or at 21 degrees Centigrade (70 degrees Fahrenheit), whichever is higher.

3.3 Additives - Corrosion Inhibitor. If so specified by the procuring activity, a corrosion inhibitor conforming to MIL-I-25017 shall be blended into the calibration fluid by the contractor. The amount added shall be equal to or greater than the minimum effective concentration listed in the latest revision of QPL-25017. The supplier may add any one of the corrosion inhibitors listed on the latest revision of QPL-25017. The supplier shall maintain documentation that the corrosion inhibitor used is an approved QPL-25017 product.

3.4 Additives-Antioxidants. If so specified by the procuring activity, an anti-oxidant additive shall be blended into the type II calibrating fluid in total concentration not less than 4.2 pounds of inhibitor (not including weight of solvents) per 1000 barrels of fluid nor more than 8.4 pounds per 1000 barrels, in order to prevent the formation of gums and peroxides. The following additives or additive blends are approved for use:

- a. 2,6-di-tert-butyl-4-methylphenol
- b. 6-tert-butyl-2,4-dimethylphenol
- c. 2,6-di-tert-butylphenol
- d. 75 percent min 2,6-di-tert-butylphenol
25 percent max tert-butylphenols and tri-tert-butylphenols
- e. 72 percent min 6-tert-butyl-2,4-dimethylphenol
28 percent max tert-butyl-methylphenols and tert-butyl-dimethylphenols
- f. 55 percent min 6-tert-butyl-2,4-dimethylphenol
45 percent max mixture of tert-butylphenols and di-tert-butylphenols
- g. 60 to 80 percent 2,6-dialkylphenols
20 to 40 percent mixture of 2,3,6-trialkylphenols and 2,4,6-trialkylphenols
- h. 35 percent min 2,6-di-tert-butyl-4-methylphenol
65 percent max mixture of methyl-, ethyl-, and dimethyl-tert-butylphenols
- i. 60 percent min 2,4-di-tert-butylphenol
40 percent max mixture of tert-butylphenols
- j. 30 percent min mixture of 2,3,6-trimethylphenol and 2,4,6-trimethylphenol
70 percent max mixture of dimethylphenols

- k. 65 percent min mixture of 2,4,5-triisopropylphenol and 2,4,6 triisopropylphenol
35 percent max mixture of other isopropylphenols and biphenols
- l. 55 percent min butylated ethyl phenols
45 percent max butylated methyl and dimethyl phenols

3.5 Workmanship. The finished calibrating fluid shall be homogenous, visually free from undissolved water, sediment, or suspended matter and shall be clear and bright at the ambient temperature or at 21°C (70°F), whichever is higher.

3.6 Toxicity. The finished calibrating fluid shall have no adverse effect on the health of personnel when used for its intended purpose. The fluid shall contain no components which produce noxious vapors in such concentrations that would cause physical irritation to personnel during use or formulation under conditions of adequate ventilation. Percent composition of benzene shall be less than 0.01% of the total volume of the calibrating fluid due to benzene's toxic properties.

3.7 Limiting Values. The following applies to all specified limits in this performance specification: For the purposes of determining conformance with these requirements, an observed value or a calculated value shall be rounded off "to the nearest unit" in the last right-hand digit used in expressing the specification limit according to the rounding-off method of ASTM Practice E 29 for using Significant Digits in Test Data to Determine Conformance with Specifications.

4. VERIFICATION

4.1 Classification of Inspection. The inspections shall be classified as quality conformance inspections.

4.2 Quality Conformance Inspection. Inspections of individual lots shall serve as a basis for acceptance and shall consist of all the examinations and tests specified in section 3. Use the chemical and physical requirements and applicable test methods as specified in Table I for conformance testing.

4.3 Lot Definitions.

a. Bulk Lot of Material. An indefinite quantity of a homogeneous mixture of material contained in one isolated tank or kettle which is greater than 55 gallons in size, or a quantity manufactured by a single plant run through the same processing equipment during one continuous operation not exceeding a 24-hour period.

b. Packaged Lot of Material. A container lot of material shall be defined as an indefinite number of 55-gallon drums or smaller unit containers of identical size and type, filled with a homogeneous mixture of material manufactured by a single plant run through the same processing equipment during one continuous operation not exceeding a 24 hour period.

4.4 Sample. Each sample shall be of sufficient size to conduct all the quality conformance tests as specified herein. Unless otherwise specified, the quality conformance tests shall be performed on each required sample.

4.5 Sampling. Sampling shall be in accordance with ASTM D 4057.

4.5.1 Drums. The number of drums selected for sampling from each lot shall be according to Table II. The calibrating fluid from each container sampled shall constitute a separate sample.

TABLE II. Sampling for test.

Number of containers in lot	Number of containers to be sampled
2-25	2
26-150	3
151-1200	5
1201-7000	8

4.2.2.1.4 Portable tanks, cargo tanks, and tank cars. Each portable tank, cargo tank, or tank car shall constitute a lot. Unless otherwise specified, the sample shall be composited into one sample when one-third portions are withdrawn from the bottom, center, and top thirds of the tank.

4.2.2.1.5 Other containers. Unless otherwise specified, other containers of 100 gallons or less water capacity shall be sampled according to 4.2.2.1.3. Containers greater than 100 gallons water capacity shall be sampled according to 4.2.2.1.4.

4.6 Government Requested Sample. When requested, a 1-gallon sample shall be forwarded to the laboratory designated by the procuring activity for testing as specified herein.

4.7 Rejection. Failure of any calibrating fluid sample to conform to any of the specification requirements shall be cause for rejection of the lot represented.

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, they will 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.

6. NOTES

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

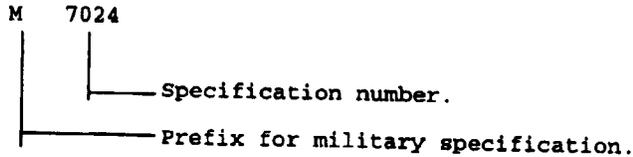
6.1 Intended Use. The fluids covered by this specification are intended for use in the calibration of aircraft fuel system components. Exercise caution to avoid prolonged contact with the skin and observe Occupational Safety and Health Administration (OSHA) guidelines.

Questions pertaining to the toxic effects should be referred to the appropriate departmental medical service.

6.2 Acquisition Requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification
- b. Type
- c. 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)
- d. Facility where Government requested test sample should be sent
- e. Quantity required, and size and type of containers required
- f. Packaging requirements (see 5.1)
- g. Addition of corrosion inhibitor to the calibrating fluid
- h. Addition of anti-oxidant additive to the calibrating fluid

6.3 Part or Identifying Number (PIN). The PIN number is created as shown below. It serves to identify a product during procurement and also in the Federal Supply System.



6.4 Changes from Previous Issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

6.5 Subject Term (key word) Listing.

High Flash Point
Corrosion Inhibitor
Antioxidant

Custodians:
Army - AV
Navy - AS
Air Force - 68

Preparing activity:
Air Force - 68

Review Activities:
Army - EA, MD
Air Force - 11
DLA - GS

(Project 6850-1205)

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-PRF-7024E

2. DOCUMENT DATE (YYMMDD)
1 OCT 1997

3. DOCUMENT TITLE CALIBRATING FLUIDS, AIRCRAFT FUEL SYSTEM COMPONENTS

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, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(if applicable)

7. DATE SUBMITTED
(YYMMDD)

8. PREPARING ACTIVITY

a. NAME SA-ALC/SFSP

b. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON

c. ADDRESS (Include Zip Code)
1014 BILLY MITCHELL BLVD. STE. 1
KELLY AFB, TX 78241-5603

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
DEFENSE QUALITY AND STANDARDIZATION OFFICE
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466
Telephone (703) 756-2340 AUTOVON 289-2340