

NOT MEASUREMENT SENSITIVE
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MIL-F-12070D  
14 October 1992  
 SUPERSEDING  
 MIL-F-12070C  
 16 May 1984

## MILITARY SPECIFICATION

### FOG OIL

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

#### 1. SCOPE

1.1 Scope. This specification covers the requirements of fog oil.

1.2 Classification. Fog oil shall be classified as specified.

	<u>Type</u>	<u>Military Symbol</u>	<u>NATO Code No.</u>
Fog Oil	SGF-2	--	F-62

#### 2. APPLICABLE DOCUMENTS

##### 2.1 Government documents.

2.1.1 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).

#### STANDARDS

##### FEDERAL

FED-STD-313	- Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities.
FED-STD-595	- Colors Used in Government Procurement.
FED-STD-791	- Lubricant, Liquid Fuel and Related Products, Methods of Testing.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: USA Belvoir Research, Development, and Engineering Center, ATTN: SATBE-TSE, Fort Belvoir, VA 22060-5606 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.
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AMSC N/A

FSC 9150

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

## MIL-F-12070D

## MILITARY

- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-290 - Packaging of Petroleum and Related Products.

(Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this specification to the extent specified herein.

## DEPARTMENT OF LABOR (DOL)

- OSHA 29 CFR 1910.1200 - Hazard Communication.

## DEPARTMENT OF TRANSPORTATION (DOT)

- CFR 49 - Parts 100-199 Transportation.

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.)

2.2 Non-Government publications. The following document(s) 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 documents cited in the solicitation (see 6.2).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 92 - Flash and Fire Points by Cleveland Open Cup.
- D 97 - Pour Point of Petroleum Oils.
- D 445 - Kinematic Viscosity.
- D 524 - Ramsbottom Carbon Residue.
- D 974 - Acid and Base Number by Color-Indicator Titration.
- D 1796 - Water and Sediment in Fuel Oils by the Centrifuge Method (Laboratory Method).
- D 2270 - Calculating Viscosity Index.
- D 4057 - Manual Sampling of Petroleum and Petroleum Products.

(Application for copies should be addressed to American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(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.)

2.3 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

## MIL-F-12070D

precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

### 3. REQUIREMENTS

3.1 Material. The fog oil shall be of overhead petroleum fraction(s) and shall contain no additives nor rerefined oils. The contractor shall certify that no carcinogenic or potentially carcinogenic constituents are present as defined under the Hazard Communication Standard (HCS) 29 CFR 1910.1200. Certification to this effect and material safety data sheets completed in accordance with FED-STD-313 shall be made available to the contracting officer or the contracting officer's representative.

3.2 Appearance. The fog oil shall be free from water, sediment, suspended particles, grit, and other foreign matter when tested as specified in 4.5.1.

3.3 Chemical and physical characteristics. The fog oil shall conform to the applicable chemical and physical characteristics of table I when tested in accordance with 4.5.

TABLE I. Chemical and physical characteristics.

Characteristic	Value	ASTM Test Method
Flash point, °C, min.	160	D 92
Fire point, °C	Report	D 92
Viscosity, Kinematic, cSt		
at 40 °C	Report	
at 100 °C		
min.	3.40	
max.	4.17	
Neutralization number, max.	0.1	D 974
Ramsbottom carbon, & wt. max.	0.2	D 524
Viscosity index	Report	D 2270
Water and sediment, & vol. max.	0.06	D 1796

### 4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

## MIL-F-12070D

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to the acceptance of defective material.

4.2 Lot. A lot shall consist of the fog oil produced by one manufacturer, at one plant, from the same materials, and under essentially the same manufacturing conditions, provided that the operation is continuous. In the event the process is a batch operation, each batch shall constitute a lot.

4.2.1 Batch. A batch is defined as that quantity of material which has been manufactured by some unit chemical process or subjected to some physical mixing operation intended to make the final product substantially uniform.

4.3 Sampling.

4.3.1 Sampling for examination of filled containers. Sample size shall be determined by using MIL-STD-105, table I and table IIa. A lot shall be accepted when zero defects are found and rejected when one or more defects are found.

4.3.2 Sampling for tests. Take samples from bulk or packaged lots for tests in accordance with ASTM D 4057.

4.4 Inspection. Perform inspection in accordance with FED-STD-791, method 9601.

4.4.1 Examination of filled containers. Examine samples taken in accordance with 4.3.1 for compliance with MIL-STD-290 with regard to fill, closure, sealing, leakage, packaging, packing, and marking requirements. Reject any container having one or more defects or under the required fill.

4.5 Test methods. Samples selected in accordance with 4.3.2 shall be tested in accordance with table I and with 4.5.1. Failure of any test shall be cause for rejection of the lot.

4.5.1 Appearance. Visually examine the specimen for water, sediment, suspended particles, grit and other foreign matter. Nonconformance to 3.2 shall constitute failure of this test.

4.5.2 Material. Materials used in the fog oil shall comply with 3.1. Certification of non-carcinogenicity as specified (i.e., materials are not considered carcinogenic or potentially carcinogenic) and material safety data sheets shall be provided to the contracting officer or the contracting officer's representative.

## MIL-F-12070D

4.6 Inspection of packaging.4.6.1 Quality conformance inspection of pack.

4.6.1.1 Unit of product. For the purpose of inspection, a completed container prepared for shipment shall be considered a unit of product.

4.6.1.2 Sampling. Sample size shall be determined by using MIL-STD-105, table I and table IIa. A lot shall be accepted when zero defects are found and rejected when one or more defects are found.

4.6.1.3 Examination. Samples selected in accordance with 4.6.1.2 shall be examined for the characteristics listed below. Presence of one or more defects shall be cause for rejection.

- 101. Unit packing for the fog oil for level A, B or C not as specified (see 5.2).
- 102. Packing for level A not as specified (see 5.1.1).
- 103. Packing for level B not as specified (see 5.1.2).
- 104. Packing for level C not as specified (see 5.1.3).
- 105. Marking not as specified (see 5.3).

## 5. PACKAGING

5.1 Unit packing. Fog oil shall be unit packed level A, B, or C as specified below.

5.1.1 Level A. A quantity of 208L (55 gal. [+2 L or -0 L]) of fog oil shall be unit packed in a drum having clean and dry interior and exterior surfaces. The drum shall conform to Department of Transportation specification 17C for a closed head drum. Each drum shall be furnished with a nominal 50.8 mm (2-inch) filler plug and a nominal 19.05 mm (3/4 inch) vent plug with flanges and gaskets located diametrically opposite the top head. The exterior of the drum shall be that standard baking enamel used by the drum supplier in his standard commercial practice and shall be olive drab color conforming to No. 24087 of FED-STD-595.

5.1.2 Level B. A quantity of 208L [55 gal. (+2 L or -0 L)] of fog oil shall be level B unit packed in accordance with MIL-STD-290.

5.1.3 Level C. Fog oil shall be level C unit packed in accordance with MIL-STD-290.

5.2 Packing. Fog oil unit packed as specified in 5.1 shall require no further protection for shipment.

5.3 Marking. Containers shall be marked in accordance with MIL-STD-290 and shall show date of fog oil manufacture and lot number.

## 6. NOTES

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

6.1 Intended use. Fog oil is intended for use in mechanical smoke generators.

## MIL-F-12070D

6.2 Acquisition requirements. Acquisition documents should 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 2.1.1 and 2.2).
- c. Level of unit packing required (see 5.1).

6.3 Other requirements. Definite numerical values are not specified for certain of the physical and chemical properties listed in 3.3, and for which corresponding test methods are given in 4.5. A copy of the test results as required in 3.3 shall be sent to US Army Belvoir Research, Development, and Engineering Center, ATTN: SATBE-FL, Ft. Belvoir, VA 22060-5606, for establishing of history data on specification product.

6.4 International agreement. Certain provisions of this specification are the subject of international standardization agreement (NATO STANAG 1135). When amendment, revision or cancellation of this specification is proposed which would affect or violate the international agreement concerned, the preparing activity will take appropriate reconciliation action through international standardization channels, including departmental standardization offices, if required.

6.5 Material Safety Data Sheets. Contracting officers will identify those activities requiring 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, appendix B.

6.6 Subject term (key word) listing.

Mechanical smoke generators  
Overhead petroleum fractions

6.7 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

## Custodians:

Army - ME  
Navy - OS

## Preparing activity:

Army - ME

## Review activities:

Army - EA, SM  
Navy - SA  
DLA - GS

Project 9150-1092

## User activities:

Navy - MC  
Air Force - 11, 68

## 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.

RECOMMEND A CHANGE \*

1 DOCUMENT NUMBER  
MIL-F-12070D

2. DOCUMENT DATE (YYMMDD)  
921014

3 DOCUMENT TITLE Fog Oil

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  
(if applicable)  
(2) AUTOVON

7 DATE SUBMITTED

8 PREPARING ACTIVITY

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US Army Belvoir RDE Center  
ATTN SATBE-TSE  
Fort Belvoir, VA 22060-5606

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

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