

MIL-F-24951 (SA)
1 February 1983

MILITARY SPECIFICATION

FUEL OIL RECLAIMED

This specification is approved for use by the Department of the Navy.

1. SCOPE

1.1 Scope. This specification covers Fuel Oil Reclaimed (Stock Number NSN 9140-01-068-6903) which is produced as a product of Navy reclamation operations (Product use is described in 6.1).

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of sale by the Navy, form a part of the specification to the extent specified herein.

STANDARDS

FEDERAL

FED-STD-791 - Lubricants, Liquid Fuels, and Related Products:
Methods of Testings

MILITARY

MIL-STD-290 - Packaging, Packing and Marking Petroleum and Related
Products

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of sale by the Navy shall apply.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 88 - Saybolt Viscosity
- D 93 - Flash Point by Pensky-Martens Closed Tester.
- D 97 - Pour Point.
- D 129 - Sulfur in Petroleum Products by the Bomb Method.
- D 270 - Sampling Petroleum and Petroleum Products.
- D 287 - API Gravity of Crude Petroleum and Petroleum
Products.
(Hydrometer Method).
- D 445 - Viscosity of Transparent and Opaque Liquids
(Kinematic and Dynamic Viscosities).
- D 473 - Sediment in Crude and Fuel Oils by Extraction
- D 874 - Sulfated Ash from Lubricating Oils and Additives
- D 1796 - Water and Sediment.

(The ASTM methods listed above are included in parts 23 or 24 of the Annual Book of ASTM Standards and are available individually. Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.)

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3. REQUIREMENTS

3.1 Material. Fuel Oil Reclaimed shall consist of a mixture of distillates and residual fuel and may contain waste lubricants or other recycled products.

3.2 Physical and chemical requirements. Fuel Oil Reclaimed shall conform to the physical and chemical requirements given in Table 1. Any requests for waivers from these requirements will be addressed to Navy Petroleum Office for approval.

TABLE-1- Chemical and Physical Requirements

Characteristics	Requirements	FED-STD 791 test method	ASTM Test method
API Gravity @ 60°F (hydrometer)(range)	25-40		D 287
Viscosity at 104°F (40°C) Kinematic, centistokes (range)	2.0 - 15.0		D 445
Viscosity @ 122°F (50°) Saybolt Universal (range)	30 - 90		D 88
Flash point °F (min)	130°F (55°C)		D 93
Pour point °F (max)	20°F (-6.7°C)		D 97
Sulfated Ash, percent (max)	0.15		D 874
Water & sediment, percent (max)	2.0		D 1796
Neutrality	Neutral	5101	
Sediment percent (max)	0.5		D 473
Chlorinated Material ^{1/}	No Green Flame		
Sulfur content, percent(max)	2.0		D 129 ^{2/} or other approved ASTM methods
Explosiveness, percent (max)	50	1151.1	

^{1/} FOR shall be essentially free of chlorinated material. To determine the presence of chlorinated material a clean copper wire is heated in a clear blue gas flame, to red heat, until no green shows in the flame. The wire is dipped while still hot, into a sample of FOR and then put back into the flame. No green shall show in the flame. (For practice, a blend of 1% of Trichloroethane in DFM or other distillate fuel may be used as an example of an oil which fails this test also. The oil should be purged of any sodium chloride by washing with fresh water.)

^{2/} In the U.S.A. sulfur limits shall be as specified by the Environmental Protection Agency, state or community where the fuel is to be used, whichever is more restrictive. In foreign countries, the sulfur limit shall conform to the limit established in the Status of Forces Agreement.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the purchase order, the Navy is responsible for the performance of all inspection requirements specified herein. Except as otherwise specified in the purchase order, the Navy may use its own or any other facilities suitable for the performance of the inspection requirements specified herein.

4.2 Bulk Lot. An indefinite quantity of a homogeneous mixture of Fuel Oil Reclaimed offered for acceptance in a single isolated container. Upper, middle and lower samples will be taken as described in ASTM D270, Section 14. Samples may be composited to a single sample if the lot is homogeneous. If the lot is not homogeneous, specification tests will be performed separately on the upper, middle and lower samples.

4.3 Homogeneity. The homogeneity of product will be determined by measuring API gravity using ASTM test method D287. Lots will be considered homogeneous if the determinations for the upper, middle and lower samples do not vary from the average by more than 0.5° for API gravity.

4.4 Sampling. Take samples for tests in accordance with ASTM method D270.

4.5 Inspection. Perform inspection in accordance with 9601 of FED-STD-791.

4.6 Classification of tests. All tests are quality conformance tests.

4.7 Test methods. Perform tests in accordance with Table 1.

5. PREPARATION FOR DELIVERY

5.1 Packaging, packing and marking. Unless otherwise specified in the purchase order packaging, packing and marketing shall be performed in accordance with MIL-STD-290.

6. NOTES

6.1 Intended use. Fuel Oil Reclaimed can be used as a substitute for Burner Fuel Oil (FED-SPEC VV-F-815D), either directly or as a blend in stationary fuel-burning furnaces for heating buildings, for the generation of steam or for other purposes.

6.2 Navy Responsibilities. The Navy is responsible for assuring that the Fuel Oil Reclaimed meets all the requirements listed in Table 1.

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6.3 User responsibilities. The user is responsible for any onsite blending and all operational or equipment modifications necessary to assure that the Fuel Oil Reclaimed is burned in a safe and efficient manner.

Preparing activity:
Navy - SA

Project No. 9140-N105

Custodian:

Navy - SA

Review activities:

To be determined

User activities:

To be determined

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

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INSTRUCTIONS: This form is provided to solicit beneficial comments which may improve this document and enhance its use. DoD contractors, government activities, manufacturers, vendors, or other prospective users of the document are invited to submit comments to the government. Fold on lines on reverse side, staple in corner, and send to preparing activity. Attach any pertinent data which may be of use in improving this document. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity. A response will be provided to the submitter, when name and address is provided, within 30 days indicating that the 1426 was received and when any appropriate action on it will be completed.

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DOCUMENT IDENTIFIER (Number) AND TITLE

MIL-F-24951 Fuel Oil Reclaimed

NAME OF ORGANIZATION AND ADDRESS OF SUBMITTER

☐ VENDOR ☐ USER ☐ MANUFACTURER

1. ☐ HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE? ☐ IS ANY PART OF IT TOO RIGID, RESTRICTIVE, LOOSE OR AMBIGUOUS? PLEASE EXPLAIN BELOW.

A. GIVE PARAGRAPH NUMBER AND WORDING

B. RECOMMENDED WORDING CHANGE

C. REASON FOR RECOMMENDED CHANGE(S)

2. REMARKS

SUBMITTED BY (Printed or typed name and address - Optional)

TELEPHONE NO.

DATE

DD FORM 1426
1 OCT 76

Replaces edition of 1 Jan 72 which may be used.

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