METRIC

MIL-PRF-26087C
21 January 2000
SUPERSEDING
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PERFORMANCE SPECIFICATION

LUBRICATING OIL, RECIPROCATING COMPRESSOR, GROUND SUPPORT

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

1. SCOPE

1.1 Scope. This specification covers lubricating oil for use in power driven, high pressure, reciprocating air compressors used for ground support (see 6.1).

1.2 Classification. The oil should be of the following grades, as specified (see 6.2):

Grade I	Medium weight	Size A = 3.8 liter can (1 gallon) Size B = 18.9 liter can (5 gallons) Size C = 208.2 liter drum (55 gallons)
Grade II	Heavy weight	Size A = 3.8 liter can (1 gallon) Size B = 18.9 liter can (5 gallons) Size C = 208.2 liter drum (55 gallons)

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 documents cited in sections 3 and 4 of this specification, whether or not they are listed.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: Defense Supply Center Richmond, Standardization Program Branch, ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610 by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 9150

2.2 Government documents. None.

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 documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 92 - Flash and Fire Points by Cleveland Open Cup, Standard Test Method for (DoD adopted)
ASTM D 97 - Pour Point of Petroleum Products, Standard Test Method for (DoD adopted)
ASTM D 445 - Kinematic Viscosity of Transparent and Opaque Liquids (the Calculation of Dynamic Viscosity), Standard Test Method for (DoD adopted)
ASTM D 91 - Precipitation Number of Lubricating Oils, Standard Test Method for (DoD adopted)
ASTM D 130 - Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test, Standard Test Method for (DoD adopted)
ASTM D 189 - Conradson Carbon Residue of Petroleum Products, Standard Test Method for (DoD adopted)
ASTM D 892 - Foaming Characteristics of Lubricating Oils, Standard Test Method for (DoD adopted)
ASTM D 974 - Acid and Base Number by Color-Indicator Titration, Standard Test Method for (DoD adopted)
ASTM D 1500 - ASTM Color of Petroleum Products (ASTM Color Scale), Standard Test Method for (DoD adopted)
ASTM E 659 - Autoignition Temperature of Liquid Chemicals

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

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for related associated specifications or specification sheets), the text of this document takes precedence. Nothing in this document, however, supercedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Materials. The composition of the lubricating oil shall consist of a highly refined base stock. Pour point additives and viscosity index improvers shall not be permitted. However, other additives necessary to assure conformance to the requirements of this specification shall be permitted.

3.1.2 Appearance and workmanship. The finished lubricating oil shall be uniform in appearance, and shall be free from sediment and suspended matter, when examined visually.

3.2 Properties. The properties of the finished oil shall be as specified in table I and in paragraphs 3.3 through 3.5.

TABLE I. Properties of finished oil.

Property	GRADE I		GRADE II	
	Min	Max	Min	Max
Viscosity, Centistokes at 37.8° C (100° F)	105	135	280	320
Viscosity, cSt at 98.9° C (210° F)	8	11	16	-
Pour Point, °C	-	(-) 21	-	(-) 9
Flash Point, °C	188	-	221	-
Autoignition Temperature, °C	315	-	315	-
Color, ASTM Number	-	5	-	5
Carbon Residue, Percent	-	0.2	-	0.3
Acid Number	-	0.3	-	0.5
Precipitation Number, Percent	-	0.05	-	0.05

3.3 Carbon residue. The residual carbon shall be soft, loose & flaky; formation of hard carbon deposits shall be cause for rejection.

3.4 Copper-strip corrosion. Corrosion of the test strips shall not exceed ASTM Copper strip classification No. 2.

3.5 Foaming characteristics. Foaming characteristics testing shall be done in accordance with ASTM D892, Standard Test Method for Foaming Characteristics of Lubricating Oils. The foaming characteristics shall not exceed the limits specified in table II.

TABLE II. Foaming characteristics of finished oil.

Test temperature sequence	Foaming tendency: maximum foam volume, mL, at end of 5-minute blowing period	Foam stability: maximum foam volume, mL, at end of 10-minute settling period
I - at 23.9° C (75° F)	300	0
II - at 93.3° C (200° F)	100	0
III - at 23.9° C* (75° F)	300	0

*After test at 93.3° C (200° F).

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as conformance inspection.

4.1.1 Conformance inspection. The conformance inspection shall consist of all of the requirements and verifications in table III unless explicitly waived in the contract.

TABLE III. Verification methods.

TITLE	REQUIREMENT	VERIFICATION
Appearance and workmanship	3.1.2	Visual Examination
Viscosity, cSt at 37.7° C (100° F)	Table I	ASTM D 445
Viscosity, cSt at 98.9° C (210° F)	Table I	ASTM D 445
Pour Point	Table I	ASTM D 97
Flash Point	Table I	ASTM D 92
Autoignition Temperature	Table I	ASTM E 659
Color	Table I	ASTM D 1500
Copper-Strip Corrosion*	3.5	ASTM D 130
Carbon Residue	Table I	ASTM D 189
Acid Number	Table I	ASTM D 974
Precipitation Number	Table I	ASTM D 91
Foaming Characteristics	3.6	ASTM D 892

*Test shall be performed at 100° C (212° F).

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 of Defense Agency, or within the Military Department’s System Command. Packaging data retrieval is available from the managing Military Department’s or Defense data retrieval is available from the managing Military Departments 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 which may be helpful, but is not mandatory.)

6.1 Intended use. The lubricating oil covered by this specification is intended for use in high compression reciprocating air compressors for application on military unique items. The requirements of the lubricants, which impact the performance of the lubricants, have not been found commercially available (i.e., either the item is produced solely from a military specification or industry specifications did not meet the requirements).

6.1.1 Grade I. Grade I, a medium weight lubricant, is suitable for use in high compression reciprocating air compressors at ambient temperatures ranging from -15° C to 54.4° C (5° F to 130° F).

6.1.2 Grade II. Grade II, a heavy weight lubricant, is suitable for use in high compression reciprocating air compressors at ambient temperatures ranging from -3.9° C to 60° C (25° F to 140° F).

6.2 Acquisition requirements. Acquisition documents must specify the following:

a. Title, number, and date of this specification.
b. Part identification number.
c. Grade of lubricating oil (see 1.2).
d. Quantity required.
e. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.3).
f. Packaging requirements (see 5.1).

6.3 Part identification number (PIN). The following part identification number procedure is for government purposes and does not constitute a requirement for the contractor.

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M      26087                    - X -      X ----- Size  A:    3.8 liter can  (1 gallon)
│        └ Specification number   └ Grade I            B:   18.9 liter can  (5 gallon)
│                                  Grade II            C:  208.2 liter drum  (55 gallon)
└ Prefix to indicate military specification
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6.4 Subject term (key word) listing.

Copper-strip corrosion
Flash point
Foaming characteristics
Heavy weight oil
Medium weight oil
Viscosity

6.5 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.

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

Reviewers:
Army - AT, AR
Navy - SH

Preparing Activity:
DLA - GS

(Project 9150-1193)

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, and send to preparing activity.

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-26087C	2. DOCUMENT DATE (YYYYMMDD) 20000121

3. DOCUMENT TITLE LUBRICATING OIL, RECIPROCATING COMPRESSOR, GROUND SUPPORT

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** (YYYYMMDD)

8. PREPARING ACTIVITY

a. NAME DEFENSE SUPPLY CENTER RICHMOND STANDARDIZATION PROGRAM BRANCH	b. TELEPHONE *Include Area Code)* (1) Commercial (2) AUTOVON
c. ADDRESS *(Include Zip Code)* ATTN: DSCR-VBD 8000 JEFFERSON DAVIS HIGHWAY RICHMOND, VA 23297-5610	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** Defense Standardization Program Office (DLSC-LM) 8725 John J. Kingman road, Suite 2533 Ft. Belvoir, VA 22060-2533 Telephone (703) 767-6888 AUTOVON 427-6888