

NOT MEASUREMENT
SENSITIVE

A-A-59137A
7 December 2010
SUPERSEDING
A-A-59137
30 January 1998

COMMERCIAL ITEM DESCRIPTION

LUBRICATING OIL, BREECH BLOCK (FOR NAVAL ORDNANCE)

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. **SCOPE.** This commercial item description (CID) covers two grades of lubricating oil that are intended for use as a lubricant in breech block guns for naval ordnance.

2. **CLASSIFICATION.** The breech block lubricating oil shall be classified by the following grades, as specified (see (7.3(b)):

Grade A - For summer use
Grade B - For winter use

3. SALIENT CHARACTERISTICS

3.1 **Composition.** The breech block lubricating oil shall consist of castor oil according to the properties of castor oil as specified in table I, and mineral oil according to ASTM D4304, "Standard Specification for Mineral Lubricating Oil Used in Steam or Gas Turbines", (using type II mineral oil and ISO viscosity grade 68). Grade A breech block lubricating oil shall consist of five parts of mineral oil to two parts of castor oil. Grade B breech block lubricating oil shall consist of 10 parts of mineral oil to 1 part of castor oil. Verification of the existence of castor oil and the percentage of castor oil in the breech block lubricating oil shall be performed using test methods such as acetyl value and saponification determination (using ASTM D94, "Standard Test Methods for Saponification Number of Petroleum Products") or more current and technically advanced commercial test methods such as the infra-red quantitative test method.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: STDZNMGT@dla.mil or Defense Logistics Agency Aviation VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at <https://assist.daps.dla.mil/>.

A-A-59137A

TABLE I. Properties of castor oil.

Property	Requirement	Test method
Acid value, max	2.0	AOCS Cd 3d-63
Clarity	Clear	Visual
Color (Gardner), max	3	AOCS Td 1a-64
Hydroxyl value	160 to 168	AOCS Cd 13-60
Loss on heating, max, %	0.25	AOCS Ca 2c-25
Refractive index, 25 °C	1.4764 to 1.4778	AOCS Cc 7-25
Saponification value	176 to 184	AOCS Cd 3-25
Solubility in alcohol ¹	Complete	-
Specific gravity, 25/25 °C	0.957 to 0.961	AOCS Cc 10c-95
Unsaponifiable, max, %	0.7	AOCS Ca 6a-40
Viscosity, St	6.3 to 8.9	AOCS Tq 1a-64
Iodine value	83 to 88	AOCS Cd 1d-92
Ricinoleic acid, min, %	85	ISO 5508, ISO 5509

¹ Castor oil shall be completely soluble without turbidity at 68 °F (20 °C) in two volumes of specifically denatured alcohol (95%) conforming to Formula No. 3-A of the U.S. Bureau of Alcohol, Tobacco Products, and Firearms in accordance with 27 CFR 21.35.

3.2 Viscosity. The breech block lubricating oil shall have a viscosity range of 50 to 60 saybolt universal seconds (SUS) at 210 °F (99 °C) for grade A, and 45 to 55 SUS at 210 °F (99 °C) for grade B, when tested in accordance with ASTM D445, "Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)", and converted to SUS by ASTM D2161, "Standard Practice for Conversion of Kinematic Viscosity to Saybolt Universal Viscosity or to Saybolt Furol Viscosity".

3.3 Pour point. The breech block lubricating oil shall have a maximum pour point of 50 °F (10 °C) for grade A, and 0 °F (-18 °C) for grade B, when tested in accordance with ASTM D97, "Standard Test Method for Pour Point of Petroleum Products".

4. REGULATORY REQUIREMENTS

4.1 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

A-A-59137A

5.2 Market acceptability. The products offered must have been previously sold either to the government or on the commercial market.

5.2.1 The company must have produced the breech block lubricating oil meeting the salient characteristics of this CID for at least 3 years.

5.2.2 The company must be able to provide test data or lab results demonstrating that the salient characteristics of the breech block lubricating oil have been met.

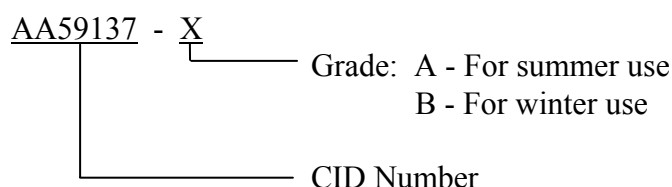
5.2.3 The company must provide a warranty for replacing defective items.

6. PACKAGING

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the acquisition order (see 7.3(c)).

7. NOTES

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



Example of reference part number: AA59137-A

7.2 Sources of documents.

7.2.1 CFR and FAR. The CFR may be obtained from the Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. Electronic copies of CFR may be obtained from <http://www.gpoaccess.gov/ecfr/>. Electronic copies of FAR may be obtained from <https://www.acquisition.gov/far/>.

7.2.2 ASTM standards. Copies of ASTM standards may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959. Electronic copies may be obtained from <http://www.astm.org/>.

7.2.3 American Oil Chemists Society (AOCS) methods. Copies of AOCS methods may be obtained from the American Oil Chemists Society, 2710 S. Boulder, Urbana, IL 61802-6996. Electronic copies may be obtained from <http://www.aocs.org/>.

A-A-59137A

7.2.4 International Organization for Standardization (ISO) standards. Copies of ISO standards may be obtained from United States member body, the American National Standards Institute, 25 West 43rd Street, 4th Floor, New York, NY 10036. Electronic copies may be obtained from <http://web.ansi.org/>.

7.3 Ordering data. The acquisition order should specify the following information:

- a. CID document number, revision, and CID PIN.
- b. Grade (see 2.).
- c. Preservation, packing, and marking (see 6.1).

7.4 Subject term (key word) listing.

Acetyl-value
Castor
Mineral
Pour point
Ricinoleic
Saponification
Saybolt
Summer
Viscosity
Winter

MILITARY INTERESTS:

Custodians:
Army - AT
Navy - OS
DLA - GS

Review Activity:
Navy - SA

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:
DLA - GS3

(Project 9150-2010-011)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at <https://assist.daps.dla.mil/>.