

METRIC

A-A-59685
April 12, 2001

COMMERCIAL ITEM DESCRIPTION

GREASE, SEALED BALL and ROLLER BEARING

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 the performance requirements of a synthetic base hydrocarbon grease thickened with a lithium complex soap that is intended for application as a lubricant for sealed bearings used in electric motors on Navy ships and submarines. It is not intended to be an extreme pressure grease or a general application lubricant.

2. CLASSIFICATION. None.

3. SALIENT CHARACTERISTICS.

3.1 Material. The grease covered by this CID shall consist of a synthetic base fluid (wax free) combined with a lithium complex soap thickener and formulated with additives to meet the requirements as specified herein.

3.2 Toxicity. The grease shall have no adverse effect on the health of personnel when used for its intended purpose. The grease shall contain no components that produce noxious vapors in such concentrations as to be an irritant to personnel during formulation or use under conditions of adequate ventilation. The product label shall caution users to avoid prolonged contact with the skin. The product shall have been reviewed by Navy Environmental Health Center to assess its potential health hazard.

3.3 Workmanship. The grease, when examined visually, shall be a smooth homogeneous mixture, free of lumps and abrasive material. The grease shall spread uniformly and appear homogeneous when worked with the straight edge of a spatula on a glass surface.

3.4 Property requirements. The grease shall have the physical and chemical properties listed in Table I and shall meet the requirements as specified when tested in accordance with the respective test method and test condition.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to:
Commander, Naval Sea Systems Command, SEA 05Q, 2531 Jefferson Davis Highway,
Arlington, VA 22242-5160.

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Table I. Property requirements for bearing grease.

Property	Test Method	Test Condition	Requirement
Base oil type	not applicable	not applicable	Synthetic hydrocarbon
Soap type	not applicable	not applicable	Lithium complex
Penetration, worked (60 strokes)	ASTM D 217	25 °C (77 °F)	265 - 295 (NLGI Grade 2)
Base oil viscosity	ASTM D 445	40 °C (104 °F) 100 °C (212 °F)	90 to 110 cSt (470 to 575 SUS) 13.5 to 16.5 cSt (76 to 88 SUS)
Dropping point	ASTM D 2265	per specification	240 °C (min.) (464 °F)
Evaporation loss	ASTM D 972	7 days at 149 °C (300 °F)	2.5% weight loss, (max.)
Bomb oxidation	ASTM D 942	100 hours at 100 °C (212 °F) 500 hours at 100 °C (212 °F)	20.68kPa (3.0 psi) (max.) 48.26kPa (7.0 psi) (max.)
Four ball wear test	ASTM D 2266	Scar diameter	0.65 mm (max.)
Four ball EP test	ASTM D 2596	Weld load Load wear index	250 kg (550 lbs.) 40 (min.)
Corrosion protection - rust	ASTM D 1743	ASTM D 1743	Pass
Minimum operating temperature range	not applicable	not applicable	-40 to 170 °C (-40 to 338 °F)
DmN	not applicable	not applicable	<350,000
Storage stability	FED-STD-791, Method 3467	Test after 6 months of storage, at 40 ±3 °C (104 ±5 °F)	±30 points from original worked penetration
Oil separation	ASTM D 6184	30 hours at 100 ±3 °C (212 ±5 °F)	1.0% (max.)
Life of lubricating grease	ASTM D 3336	177 °C (350 °F)	200 hours (min.)

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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).

4.2 Hazardous substance. The grease shall conform to the requirements of the Federal Hazardous Substance Act (16 CFR 1500.121).

4.3 Off-gassing. The grease shall qualify for limited use under the provisions of Chapter 7 of the Submarine Atmosphere Control Manual, NAVSEA S9510-AB-ATM-010/(U).

5. PRODUCT CONFORMANCE PROVISIONS.

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

5.2. Market acceptability. The company must demonstrate through laboratory testing that the product will exhibit the salient properties of this commercial item description.

6. PACKAGING.

6.1 Preservation, packing, and marking. Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 Ordering data. Purchaser shall specify the following:

- (a) Title, number and date of this CID.
- (b) Size of containers and quantity required.

7.2 Material safety data sheets. The contracting officer shall identify in the purchasing document those activities that shall be provided material safety data sheets prepared in accordance with FED-STD-313.

7.3 Dimensions. Products manufactured to inch-pound dimensions will be considered on an equal basis with those manufactured using metric units, provided they fall within specified tolerances using conversion tables contained in the latest revision of FED-STD-376 and all other requirements of this Commercial Item Description are met.

7.4 Carcinogens. The procuring document should require submittal of certification that no carcinogenic constituents are present as defined under OSHA 29 CFR 1910.1200.

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7.5 Source of documents.

7.5.1 ASTM standards are available from the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.

7.5.2 FED-STDs are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

7.5.3 The CFR is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20401.

7.5.4 The FAR is available from the U.S. General Services Administration, 1800 F Street NW, Washington, DC 20405.

7.5.5 NAVSEA technical manuals are available from the Naval Publications and Forms Directorate, Navy Inventory Control Point, 700 Robbins Avenue, Philadelphia, PA 19111-5098.

7.6 Potential sources. The following products comply with the salient characteristics of this Commercial Item Description when this document was developed:

<u>Manufacturer</u>	<u>Product Name and Code</u>
Mobil Oil Corporation Lubricant Marketing 3225 Gallows Road Fairfax, VA 22037	Mobilith SHC 100 Product Code: 64407-0
Shell Oil Company Lubricants Division One Shell Plaza Houston, TX 77002	Albida SLC 100 Product Code: 70358
Exxon Marketing Technical Services 800 Bell St. Houston, TX 77002	Unirex SHP 100 Product Code: 415224

7.7 Key words.

Electric motors
Grease
Grease, sealed ball and roller bearing
Sealed bearing

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MILITARY INTERESTS:

Custodians:

Air Force-68
Army-AT
Navy-SH
DLA-PS

Review Activities:

Air Force-03, 11
Army-MI
Navy-AS, SA
DLA-GS, GS3

CIVIL AGENCY COORDINATING ACTIVITY:

GSA-FSS

Preparing Activity: Navy-SH
Project 9150-1255