

VV-P-236A

December 29, 1977

SUPERSEDING

Fed. Spec. VV-P-236

December 17, 1954

FEDERAL SPECIFICATION

PETROLATUM, TECHNICAL

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers one grade of petrolatum for use as a light lubricating grease.

2. APPLICABLE DOCUMENTS

2.1 Government publications. The issues of the following documents, in effect on date of invitation for bids or solicitation for offers, form a part of this specification to the extent specified herein.

Federal Standards:

Federal Test Method Std. 791

-Lubricant, Liquid Fuel, and
Related Products, Methods
of Testing.

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Philadelphia, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Houston, Denver, San Francisco, Los Angeles and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

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Military Standards:

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

(Copies of Military Specifications and Standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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 date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM) Standards:

- D 88 -Saybolt Viscosity, Test for.
- D 91 -Precipitation Number of Lubricating Oils, Test for.
- D 92 -Flash and Fire Points by Cleveland Open Cup, Test for.
- D 127 -Drop Melting Point of Petroleum Wax, Including Petrolatum, Test for.
- D 482 -Ash from Petroleum Products, Test for.
- D 937 -Cone Penetration of Petrolatum, Test for.
- D 974 -Neutralization Number by Color-Indicator Titration, Test for.
- D 1500 -ASTM Color of Petroleum Products (ASTM Color Scale), Test for.

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

3. REQUIREMENTS

3.1 Materials. The composition of the petrolatum is not limited.

3.2 Chemical and physical requirements. The petrolatum shall conform to the requirements specified in table I.

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TABLE I. Chemical and Physical Requirements.

| Requirements | Limits | Test Paragraph |
|---|--------------------|----------------|
| Color, ASTM color number | No. 2 - No. 8 | 4.5.1 |
| Melting point, °C (°F) | 46.1(115) -60(140) | 4.5.1 |
| Viscosity, Saybolt, at 100°C (212°F), seconds | 70-95 | 4.5.1 |
| Flash point, open cup. °C (°F), min. | 199 (390) | 4.5.1 |
| Penetration, unworked | 150-275 | 4.5.1 |
| Corrosion on copper | Pass 1/ | 4.5.1 |
| Ash content, percent by weight, max. | 0.1 | 4.5.1 |
| Neutralization number, max. | 0.10 | 4.5.1 |
| Precipitation number, max. | 0.10 | 4.5.1 |
| Abrasive material | none | 4.5.2 |
| Evaporation loss, percent, max. | 2 | 4.5.3 |

1/ After 24 hours, the petrolatum that is in contact with the copper strip shall show no green color, nor shall the petrolatum cause a black or green discoloration of the copper strip.

3.3 Workmanship. The petrolatum shall be manufactured by such processes as to produce a smooth, homogeneous and uniform product suitable for the purpose intended.

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 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.

4.2 Classification of inspections. The inspection and testing of petrolatum shall be classified as follows:

- a. Quality conformance inspection (4.3).

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4.3 Sampling.

4.3.1 Quality conformance inspection samples. The quality conformance inspection samples shall consist of a sample for tests (4.3.1.2) and samples for examination of filled containers (4.3.1.3). Samples shall be labeled completely with information identifying the purpose of the sample, name of product, manufacturer's name, specification number, lot and batch number, date of sampling, and contract number.

4.3.1.1 Lot and batch. All petrolatum manufactured as one batch shall be considered a lot and shall be numbered as such for purposes of inspection. A batch is defined as the end product of all the raw materials mixed or blended in a single operation (not exceeding 24 hours) through the same processing equipment with no change in the ingredient materials.

4.3.1.2 Sample for tests. Two random containers shall be taken from each lot. A 1-pound sample shall be taken from each container and placed in separate clean, dry, metal or glass containers which shall then be sealed. Each sample shall be subjected to all the quality conformance tests (4.5.1 through 4.5.3). If either sample fails any of the quality conformance inspection tests, the inspection lot shall be rejected.

4.3.1.3 Sample for examination of filled containers. A random sample of filled containers shall be selected from each lot in accordance with MIL-STD-105 at inspection level 1 and acceptable quality level (AQL) equal to 2.5 percent defective.

4.4 Quality conformance inspection tests. The quality conformance inspection tests shall include testing of the samples (4.3.1.2) for conformance to the requirements of this specification, and on examination of sample containers (4.3.1.3) for conformance to the packaging, packing, and marking requirements.

4.4.1 Test conditions. Test conditions shall be in accordance with 4.5 and chemical and physical values specified in section 3 apply to the average determinations made on the sample.

4.5 Methods of examination and test.

4.5.1 The petrolatum shall be tested in accordance with table II and 4.5.2 through 4.5.3 to determine conformance with 3.2 and examined in accordance with 4.5.4 to determine conformance with 5.1.

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TABLE II. Test Methods.

| Test | Fed. Test Method Std. No. 791, Method No. | ASTM Test Method No. |
|--------------------------|--|-------------------------|
| Color, ASTM color number | 5309 | D 1500 |
| Melting point | | D 127 |
| Viscosity, Saybolt | | D 88 |
| Flash point | | D 92 |
| Penetration, unworked | | D 937 |
| Corrosion on copper | | |
| Ash content | | D 482 |
| Neutralization number | | D 974 |
| Precipitation number | | D 91 1/ |

1/ Melt a sample of the petrolatum in a small beaker, stir vigorously, and measure 10 milliliters of the melted sample into a graduated centrifuge tube. Add 70 to 80 milliliters of precipitation naphtha conforming to ASTM D91. Immerse the tube in a water bath at a temperature of $65^{\circ} + 3^{\circ}\text{C}$ ($150^{\circ} + 5^{\circ}\text{F}$) and allow to remain with occasional shaking, until the petrolatum grease is in solution. Add precipitation naphtha to make 100 milliliters. Invert at least 20 times and proceed in accordance with ASTM method D91.

4.5.2 Abrasive material. The precipitate obtained from the precipitation number test (4.5.1) shall be rubbed between two smooth pieces of plate glass. The presence of abrasive materials as evidenced by a gritty feel or scratches in the glass, shall be cause for rejection of the lot represented.

4.5.3 Evaporation loss. Place five grams of the petrolatum to be tested in a flat-bottomed brass cup of known weight and having the following dimensions: outside diameter, 1-31/32 inches; inside diameter, 1-29/32 inches; outside height, 1-3/16 inches; thickness of metal, 1/32 to 1/16 inch. Heat in a constant-temperature of $105^{\circ} - 110^{\circ}\text{C}$ ($221^{\circ} - 230^{\circ}\text{F}$) for 1 hour. Remove cup, cool to a room temperature of $25^{\circ} + 3^{\circ}\text{C}$ ($77^{\circ} + 5^{\circ}\text{F}$) in a dessicator, and weigh. The loss in weight shall be reported in percent as the evaporation loss.

4.5.4 Examination of filled containers. Each sample of filled container selected in accordance with 4.3.1.3 shall be examined for defects of the container and closure, for evidence of leakage and unsatisfactory markings. Each sample container shall also be weighed to determine the amount of contents. If the number of defective containers exceeds the acceptance number of the sampling plan specified in 4.3.1.3, the lot shall be rejected. Rejected lots may be resubmitted for reexam-

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ination provided the contractor has removed or repaired all nonconforming containers.

4.6 Rejection and retest. Petrolatum which has been rejected may be reworked or replaced to correct the defects, and resubmitted for acceptance. Before resubmitting, full particulars concerning previous rejection and the action taken to correct the defects found in the original lot or batch shall be furnished the Inspector. Material rejected after retest shall not be resubmitted without specific approval of the procuring agency.

5. PREPARATION FOR DELIVERY

5.1 Packaging, packing, and marking. The petrolatum shall be packaged, packed, and marked in accordance with MIL-STD-290. The type and size of containers and the level of packaging and packing shall be as specified by the procuring activity (see 6.2).

5.2 Additional marking. In addition to the markings specified in MIL-STD-290, the following marking shall be included on the exterior shipping container: "STORE IN A COOL PLACE".

6. NOTES

6.1 Intended use. The petrolatum covered by this specification is intended for use as a light grade of lubricating grease. It is not recommended for use as a lubricant in heavily loaded or hot running bearings. It may be used as a constituent in certain types of rust preventative compounds. It is not to be used as a remedy, medicine or lubricant for the human body.

6.2 Ordering data. Purchasers should select the preferred options permitted herein and include the following information in procurement documents:

- a. Title, number, and data of this specification.
- b. Type and size of container (see 5.1).
- c. Level of packaging and packing required (see 5.1).
- d. Special markings (see 5.2).
- e. Quantity desired.

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MILITARY CUSTODIANS:

Army - MR
Navy - AS
Air Force - 11

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

REVIEW ACTIVITIES:

Army - AT, EA, AR, SC, MI
Navy - OS, SH, SA
DLA - PS, GS

USER ACTIVITIES:

Army - GL, ME
Navy - YD

PREPARING ACTIVITY:

Navy - AS
(Project No. 9150-0459)

U.S. GOVERNMENT PRINTING OFFICE : 1978 - 261-622'1220

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein.

Price 70 cents each.