

INCH-POUND
A-A-50493B
30 August 2001
SUPERSEDING
A-A-50493A
21 August 1998

COMMERCIAL ITEM DESCRIPTION

OIL, PENETRATING (FOR LOOSENING FROZEN METALLIC PARTS)

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

1. **SCOPE.** This commercial item description (CID) establishes the government acquisition requirements for penetrating oil to be used for freeing of corroded and frozen metallic parts resisting movement, without causing damage to such parts. The penetrating oil is applied to metal surfaces to break down rust and corrosion, reduce friction, and retard corrosion.

2. **CLASSIFICATION.** The penetrating oil shall be one of the following types as specified (see 7.5(b)). The unit of issue (see 7.5(c)) and quantity required (see 7.5(d)) shall be as specified in the acquisition order.

2.1 Type.

Type I - liquid application (brush, dip, or spray)

Type II- aerosol application

3. SALIENT CHARACTERISTICS

3.1 Materials. The penetrating oil is a synthetic oil or light mineral oil, or a mixture of these oils, with or without additives.

3.2 Performance.

3.2.1 Pour point. The penetrating oil shall have a pour point of not greater than -14 °F (-25 °C) in accordance with American Society for Testing and Materials (ASTM) D 97, "Standard Test Method for Pour Point of Petroleum Products" (DoD adopted).

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Defense Supply Center Richmond (DSCR), ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

AMSC N/A

FSC 9150

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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3.2.2 Viscosity. The penetrating oil shall have a viscosity of 1.7 to 10 centistokes at 104 °F (40 °C) in accordance with ASTM D 445, "Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (the Calculation of Dynamic Viscosity)" (DoD adopted).

3.2.3 Flash point. Penetrating oil with a kinematic viscosity of 1.7 to 5.5 centistokes at 104 °F (40 °C) shall have a minimum flash point of 125 °F (51.7 °C) in accordance with ASTM D 56, "Standard Test Method for Flash Point by Tag Closed Tester" (DoD adopted). Penetrating oil with a kinematic viscosity of greater than 5.5 centistokes at 104 °F (40 °C) shall have a minimum flash point of 125 °F (51.7 °C) in accordance with ASTM D 93, "Standard Test Method for Flash Point by Pensky-Martens Closed Cup Tester" (DoD adopted).

3.2.4 Water. The penetrating oil shall have 0.0 percent water content in accordance with ASTM D 95, "Standard Test Method for Water in Petroleum Products and Bituminous Materials by Distillation" (DoD adopted), and 40 Code of Federal Regulations (CFR) 60, Appendix A, "Method 24 Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings".

3.2.5 Corrosion. The penetrating oil shall cause no corrosion in accordance with method 5306.5 of FED-STD-791, "Lubricants, Liquid Fuels, and Related Products; Methods of Testing". For method 5306.5, isopropyl alcohol in accordance with ASTM D 770, "Standard Specification for Isopropyl Alcohol", and paragraph 4.4 of this document. The requirements for emulsification of samples and the subsequent addition of distilled water shall be eliminated when not applicable.

3.2.6 Surface tension. The penetrating oil shall have a surface tension of not greater than 44 dynes per square centimeter (4.4 pascal (Pa)) in accordance with ASTM D 3825, "Standard Test Method for Dynamic Surface Tension by the Fast-Bubble Technique".

3.2.7 Interfacial tension. The penetrating oil shall have an interfacial tension of not greater than 33 dynes per square centimeter (3.3 Pa) in accordance with ASTM D 971, "Standard Test Method for Interfacial Tension of Oil Against Water by the Ring Method" (DoD adopted).

3.3 Workmanship. The penetrating oil shall be free from dirt, sediment, disagreeable odors, or other foreign matter as determined by visual or olfactory examination.

3.4 Propellant. For Type II material, the propellant shall be carbon dioxide, nitrous oxide, or nitrogen. The propellant shall expel the contents of the container and shall be nonflammable in accordance with 49 CFR 173, "Shippers--General Requirements for Shipments and Packagings".

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 Hazard communication standard. The contractor shall certify that no carcinogenic or potentially carcinogenic constituents are present in the penetrating oil in accordance with 29 CFR 1910.1200, "Hazard Communication" and 29 CFR 1910, Subpart Z, "Toxic and Hazardous Substances". The contractor shall provide certification to this effect to the contracting officer or the contractor's designated representative (see 7.5(e)).

4.3 Toxicity. The materials used in the oil, unless specific material maximum levels are specified herein, shall have no known carcinogenic materials identified by Occupational Safety and Health Administration (OSHA) regulated carcinogens, as identified by 29 CFR 1990, "Identification, Classification, and Regulation of Potential Occupational Carcinogens", or International Agency for Research on Cancer (IARC) latest monographs, or the latest annual report of the National Toxicology Program (NTP), and shall have no extremely hazardous substances (EHS) or toxic chemicals identified in 40 CFR 355, Appendix A, "The List of Extremely Hazardous Substances and Their Threshold Planning Quantities" and 40 CFR 372.65, Subpart D, "Specific Toxic Chemical Listings", respectively. The manufacturer shall not, unless specific material maximum levels are specified herein, allow the addition of any known or suspected carcinogens, extremely hazardous substances, or toxic chemicals to the formulation. When any of these prohibited materials are or may be present, as a trace or as an impurity in another ingredient(s), the concentration of the prohibited material shall not equal or be greater than 0.1 percent by weight of the oil. The oil shall have no adverse effect on the health of personnel when used for its intended purpose.

4.4 Ozone-depleting chemicals. The materials used in the oil shall not contain class I or class II ozone depleting chemicals (ODC) as defined in 40 CFR 82, "Protection of Stratospheric Ozone". In addition, no ODC shall be used in the manufacturing or testing of these products.

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 marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The following market acceptability criteria are necessary to document the quality of the product to be provided under this CID.

- a. The company must have produced penetrating oil meeting the salient characteristics of this CID for at least 3 years.
- b. The company must be able to show test data or lab results substantiating that the product offered meets the salient characteristics of this CID.
- c. The company must provide a warranty for the replacement of defective material.

6. PACKAGING

6.1 Preservation, packing, and marking. For acquisition purposes, the penetrating oil shall be preserved, packed, and marked as specified in the acquisition order (see 7.5(f)).

7.4 National stock numbers (NSN). The NSNs listed below are assigned to the listed product sizes. Other NSNs may also correspond with this document.

<u>Assigned NSN</u>	<u>Type</u>	<u>Container size</u>
9150-00-261-7899	I	1 pint can
9150-00-223-4119	I	1 gallon can
9150-00-852-4659	I	55 gallon drum
9150-00-529-7518	II	16 ounce aerosol

7.5 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN
- b. Type (see 2)
- c. Unit of issue (see 2)
- d. Quantity (see 2)
- e. Certification clause (see 4.2)
- f. Preservation, packing, and marking requirements (see 6.1)
- g. Hazardous material identification and material safety data sheets (see 7.3)

7.6 Subject term (key word) listing.

corrosion
friction
mineral
rust
synthetic

MILITARY INTERESTS:

Custodians:
Army - AT
Navy - SH
Air Force - 68

**CIVIL AGENCY
COORDINATING ACTIVITY:**

GSA - 6FET

Preparing activity:
DLA - GS3

(Project 9150-1250)