NOTE: The document identifier and heading has been changed on this page to reflect that this is a performance specification. There are no other changes to this document. The document identifier on subsequent pages has not been changed, but will be changed the next time this document is revised.

MIL-PRF-18487A(OS)
7 April 1972
SUPERSEDING
MIL-C-18487 (NOrd)
13 June 1955

PERFORMANCE SPECIFICATION

COMPOUND, GUN SLUSHING

This specification has been approved by the Naval Ordnance Systems Command, Department of the Navy.

1. SCOPE

1.1 The gun slushing compound covered by this specification is intended for use as a corrosion preventive on ferrous and nonferrous metals which are stored indoors or outdoors for indefinite periods. (See 6.1.).

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

SPECIFICATIONS

Federal

P-D-680	Dry Cleaning Solvent
PPP-C-96	Can, Metal, 28 Gage and Lighter

STANDARDS

Federal

FED-STD-791	Lubricants, Liquid Fuels, and Related Products; Methods of Testing

FSC 8030

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage

(Copies of specifications, standards, drawings, and publications required by suppliers 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)

ASTM Standards on Petroleum Products and Lubricants, Parts 17 and 18

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

CODE OF FEDERAL REGULATIONS

49 CFR 171-190	Hazardous Materials Regulations, Department of Transportation

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.)

3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order and before production has commenced, a sample or samples of the gun slushing compound shall be made available to the contracting officer or his authorized representative for approval in accordance with 4.3. The approval of the first article samples authorizes the commencement of production but does not relieve the supplier of responsibility for compliance with all the applicable provisions of this specification.

3.2 Homogeneity. The compound shall be a completely homogeneous mixture of smooth consistency, free from lumps, crusts, and granular particles.

3.3 Melting point. The melting point of the compound shall be not less than 150° Fahrenheit nor more than 165° Fahrenheit.

3.4 Foaming. The compound shall show no evidence of foaming when tested as specified in 4.6.2.

3.5 Abrasiveness. The compound shall contain no abrasive substances.

3.6 Stability at elevated temperatures. The compound shall remain homogeneous when tested as specified in 4.6.4.

3.7 Corrosiveness. The compound shall not be corrosive to copper when tested as specified in 4.6.5.

3.8 Corrosion protection. No rust shall exist on any of the test specimens after completion of the salt spray and rain test specified in 4.6.6.

3.9 Sliding and separation. There shall be no evidence of sliding or separation of the compound on any of the three plates after being hung in a vertical position in an oven maintained at a temperature of 140° ± 2° Fahrenheit for a period of 24 hours as specified in 4.6.6.

3.10 Compound removal. The compound shall be readily removable from metal surfaces by the use of wiping cloths saturated with dry cleaning solvent conforming to P-D-680 after being subjected to the salt spray and rain test specified in 4.6.6.

3.11 Consistency. The compound shall have an unworked consistency of not less than 90 nor more than 150 when tested as specified in 4.6.7.

3.12 Water content. The compound shall not contain water in excess of 0.01 percent.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

(a) First article inspection (see 4.3)
(b) Quality conformance inspection (see 4.4).

4.3 First article inspection. First article inspection (see 6.3) shall consist of examinations and tests for all the requirements specified in sections 3 and 5 herein.

4.4 Quality conformance inspection. Quality conformance inspection shall consist of examinations and tests for all requirements specified in sections 3 and 5 except for corrosion protection, sliding and separation, and compound removal (3.8, 3.9, and 3.10).

4.4.1 Sampling.

4.4.1.1 Lot size. For the purposes of sampling, a lot shall consist of all gun slushing compound manufactured as one batch and offered for delivery at one time. A batch shall not exceed 5000 pounds.

4.4.1.2 Sampling for tests. A 5-pound sample shall be selected from each lot submitted for acceptance. Sampling procedures shall be in accordance with method 8001 of FED-STD-791 (ASTM D 270).

4.4.1.3 Sampling for inspection of containers. A random sample of filled containers shall be selected in accordance with MIL-STD-105, inspection level I, with an acceptable quality level of 2.5 percent defective, to verify compliance with all the requirements regarding fill, closure, marking, and other requirements not requiring tests.

4.5 Examination. Each sample filled container selected in accordance with 4.4.1.3 shall be examined for defects of the container and the closure, for evidence of leakage, and for unsatisfactory markings. Each sample filled container shall be weighed to determine the amount of contents. Any container in the sample having one or more defects shall be rejected, and if the number of defective containers exceeds the acceptance number for the appropriate sampling plan of MIL-STD-105, the lot represented by the sample shall be rejected. Rejected lots may be resubmitted for acceptance tests providing the contractor has removed or repaired all nonconforming containers.

4.6 Test methods.

4.6.1 Homogeneity. Portions shall be taken from the top, bottom, and intermediate parts of the sample and examined visually or by analysis to determine that there is no material difference in appearance or consistency.

4.6.2 Melting point. The melting point shall be determined in accordance with method 1401 of FED-STD-791 (ASTM D 127).

4.6.3 Abrasiveness. A 50-gram sample shall be heated with 100 milliliters benzol (C_6H_6) on the steam bath to about 180° to 190° Fahrenheit and stirred until all soluble matter is in solution. While still hot, filter through a clean, dry filter paper. If any residue remains on the paper, wash the residue with 25 milliliters of benzol, transfer a portion of the residue to a clean piece of polished glass, and rub vigorously with a clean finger. Wash the residue from the glass, dry, and examine the dry, clean glass. Scratches produced on the glass by this treatment indicate the presence of abrasive substances.

4.6.4 Stability at elevated temperature. Transfer approximately 25 grams of the sample to a test tube approximately 13 millimeters (mm) in diameter and 250 mm long (1/2 inch by 10 inches), heat in a waterbath maintained at 180° to 190° Fahrenheit for 1 hour. Remove from the bath and examine while hot, and after cooling, for any visible separation into layers of different appearance or separation of solid or liquid matter at the bottom of the tube.

4.6.5 Corrosiveness. Corrosiveness shall be determined in accordance with method 5304 of FED-STD-791, except that the time of exposure shall be 5 days instead of 24 hours.

4.6.6 Salt spray and rain test. Clean and polish four steel panels approximately 3 inches by 6 inches by 1/8 inch as specified in ASTM D 1748. The material to be examined shall be melted, heated to 180° ± 5° Fahrenheit, and a light coat (approximately 1/16-inch thick) brushed on the plates. One of the plates shall be kept in a vertical position in the laboratory for 24 hours and then placed in a rack, exposed to the weather in an unshaded location, so that the plate shall be inclined at an angle of 45° to the vertical facing south. The plate shall be sprayed lightly with a 4 percent salt solution of the first day and left exposed to the weather for not less than 60 days. The other three plates shall be hung in a vertical position in an oven and maintained at a temperature of 140° ± 2° Fahrenheit for 24 hours. These three plates shall be examined for compliance with the requirements of 3.9. The plates shall be removed from the oven, allowed to cool, and one plate exposed in the rack described above. Another plate shall be kept in a horizontal position and lightly sprayed with a 4 percent salt solution once every day for a period of 5 days. The fourth plate shall be placed under an intermittent shower of water maintained at a temperature of 100° Fahrenheit, a vigorous shower being applied for approximately 3 to 4 minutes then no water for about the same length of time; the shower shall be formed by allowing water, maintained at a temperature of 100° Fahrenheit to siphon at intervals from a 5-gallon tank into a metal trough, the bottom of which has three or more parallel rows of small holes (about 1/16-inch diameter). This test should be continued for not less than 5 hours, the plate being held in a position about 60° to the vertical immediately under falling water. At the end of 5 hours of this intermittent showering, the plate shall be placed in a horizontal position and allowed to remain with the adhering water for at least 24 hours. No rust shall be in evidence on any of the four plates after the completion of the test, and the coating on all the plates shall be easily removed with waste, wet with Stoddard solvent.

4.6.7 Consistency. The material shall be melted at a temperature of 180° ± 2° Fahrenheit and poured into a standard grease worker, described in method 311 of FED-STD-791 (ASTM D 217), which has been equipped with a 1/2-inch tall brass collar screwed to the top. (When pouring the sample into the grease worker, fill as near to the top of the rim as possible.) The sample shall be allowed to stand overnight in the worker at room temperature and then brought to 77° Fahrenheit. The brass collar shall then be carefully removed and the grease protruding shall be cut off smooth with the top of the worker by the use of a spatula. Five penetrations shall be made immediately on the sample by the standard penetrometer cone, described in method 311 of FED-STD-791 (ASTM D 217), using a 150-gram load, 5 seconds, and the average result reported as the consistency. The penetrations shall be made three-fourths of an inch from center and spaced evenly around the circumference.

4.6.8 Water content. The water content shall be determined in accordance with method 3001 of FED-STD-791 (ASTM D 95).

5. PREPARATION FOR DELIVERY

5.1 Packaging. Unless otherwise specified, the gun slushing compound shall be furnished in 35-pound, lug cover, steel grease pails or 400-pound removable head, side seam welded, steel drums as specified by the procuring activity. The steel pails shall conform to the requirements of PPP-C-96; the steel drums shall conform to the requirements of 49 CFR 171-190. The closure for the drums shall have a bolted ring seal cover.

5.2 Packing. No overpacking is required for the 35- or 400-pound metal containers for domestic or overseas shipment.

5.3 Marking. In addition to any special marking required by the contract or order, marking shall conform to the requirements of MIL-STD-129.

6. NOTES

6.1 Intended use. Gun slushing compound is intended as a corrosion preventive for ferrous and nonferrous metals in indefinite storage and in outdoor and indoor use. It is applied hot in thin coats by brushing or dipping. It is soluble in commercial solvents, slow to dissolve, especially in cold weather when used outdoors. It is usually found more economical, in both time and material, to remove the compound by steaming or scraping. The compound when applied over clean surfaces provides excellent protection.

6.2 Ordering data. Procurement documents should specify the following:

(a) Title, number, and date of this specification

(b) Quantity

(c) Size of shipping container desired (see 5.1)

(d) Special marking required, if any (see 5.3)

(e) Point of delivery

(f) Whether first article testing is necessary, where testing will be performed, and size of sample required (see 3.1 and 6.3).

6.3 First article. When a supplier is in continuous production from contract to contract, consideration should be given to waive the first article inspection. When a first article is specified (see 6.2) and as soon as practicable after the award of contract, first article samples shall be separately packaged and forwarded to the testing activity indicated in the contract or order, who shall have the responsibility for testing to determine compliance with the requirements of this specification and notifying the procuring activity of approval or disapproval. Samples shall be plainly identified with securely attached durable tags or labels marked with the following information:

(a) Samples for first article inspection
(b) Contract or order number
(c) Gun slushing compound; specification number
(d) Manufacturer's identification
(e) Date of manufacture
(f) Manufacturer's name and address.

6.4 Gun slushing compound shall be purchased on a pound basis, the unit being 1 pound.

Custodian:
Navy - OS

Preparing activity:
Navy - OS
(Project No. 8030-N035)

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 22-R255

INSTRUCTIONS: This sheet is to be filled out by personnel, either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.

SPECIFICATION

MIL-C-18487A (OS), Compound, Gun Slushing

ORGANIZATION

CITY AND STATE

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

[ ] DIRECT GOVERNMENT CONTRACT [ ] SUBCONTRACT

1. HAS ANY PART OF THE SPECIFICATION CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. IS THE SPECIFICATION RESTRICTIVE?

[ ] YES [ ] NO *(If "yes", in what way?)*

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED BY *(Printed or typed name and activity - Optional)*

DATE

DD FORM 1 JAN 66 1426

REPLACES EDITION OF 1 OCT 64 WHICH MAY BE USED.