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SUPERSEDING
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FEDERAL SPECIFICATION

DISHWASHING COMPOUND, HAND
(SYNTHETIC DETERGENT, SOLID AND LIQUID FORM)

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

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers concentrated, nonabrasive, synthetic organic detergents for use in hand dishwashing (see 6.1).

1.2 Classification. The dishwashing compounds shall be of the following types and classes, as specified (see 6.2).

Type I - Spray-dried bead or drum-dried flake or granule.
  Class 1 - Nonphosphate.
  Class 2 - With phosphate.

Type II Concentrated liquid form, clear or opaque lotion, nonphosphate.

2. APPLICABLE DOCUMENTS

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

Federal Specifications:

RR-S-366	- Sieve, Test.
UU-S-48	- Sacks, Shipping, Paper.
PPP-B-636	- Boxes, Shipping, Fiberboard.
PPP-C-96	- Cans, Metal, 28 Gage and Lighter.
PPP-P-704	- Pails, Metal: (Shipping, Steel, 1 through 12 Gallons).

Federal Standard:

Fed. Std. No. 123 - Marking for Shipment (Civil Agencies).

(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, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, 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.)

Military Standards:

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

(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.)

Laws and Regulations:

16 CFR 1500 - Federal Hazardous Substances Act Regulations.

(The Code of Federal Regulations (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, 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 460 - Sampling and Chemical Analysis of Soaps and Soap Products.
D 800 - Chemical Analysis of Industrial Metal Cleaning Compositions.
D 820 - Chemical Analysis of Soaps Containing Synthetic Detergents.
D 2983 - Apparent Viscosity of Gear Oils at Low Temperatures Using the Brookfield Viscometer.

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

National Motor Freight Traffic Association, Inc., Agent:

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Traffic Department, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

3. REQUIREMENTS

3.1 Material.

3.1.1 Type I. The dishwashing compounds shall be clean, uniform, free-flowing, drum-dried flakes or granules or spray-dried beads, free of any objectionable odor, and shall conform to the requirements specified in table I and section 3. It shall contain synthetic detergents.

3.1.2 Type II. The dishwashing compound shall be a mobile, stable, single-phase liquid, mildly perfumed, free of any objectionable odor, sediments, and suspended particles. It shall be either clear or opaque, or water-white. It shall contain synthetic detergents and foam stabilizers. The finished formulation shall meet the requirements as specified in table I and section 3.

TABLE I. Composition, chemical, and physical requirements

	Type I				Type II	
	Class 1		Class 2			
	Min.	Max.	Min.	Max.	Min.	Max.
Moisture and matter volatile at 105°C, percent	-	4.0	-	9.0	-	-
Synthetic organic detergents, percent	30.0	-	15.0	-	26.0	-
Condensed phosphates (as P_2O_5), percent	-	None	11.5	20.5	-	None
Silicates (as SiO_2), percent	-	None	-	6.0	-	None
pH of 1.0 percent solution	6.0	9.0	9.0	11.0	-	-
pH of 10.0 percent solution	-	-	-	-	6.5	8.5
Bulk density, gram/ml	0.24	0.60	0.25	0.60	-	-
Particle size						
Retained on No. 16 sieve	-	-	-	10.0	-	-
Retained on No. 170 sieve	-	-	90.0	-	-	-
Viscosity, centipose	-	-	-	-	150	350
Sugars	-	None	-	None	-	None
Total alkalinity (as Na_2O), percent	-	1.0	-	12.0	-	1.0

3.2 Solubility in hard water.

3.2.1 Type I, class 1. The compound shall be completely soluble in water at 45°C (113°F) having a hardness of 20 grains per gallon when tested as specified in 4.4.11.

3.2.2 Type II. The compound shall form a stable solution or dispersion in water at 45°C (113°F) having a hardness of 20 grains per gallon, and shall show no separation of solids or liquids when tested as specified in 4.4.11.

3.3 Rinsing properties. The dishwashing compounds shall be free-rinsing, when tested as specified in 4.4.12.

3.4 Suds stability in the presence of grease. When tested as specified in 4.4.13, a 0.27 percent solution of the dishwashing compound in 20-grain hard water shall generate an initial suds height of at least 2 inches and, after washing the grease-soaked dish cloth in the solution, the final suds covering the entire surface of the solution shall measure at least 1/8 inch in height.

3.5 Sodium chloride content (all types). The dishwashing compounds shall contain no more than 6.0 percent sodium chloride when tested as specified in 4.4.2.

3.6 Labeling.

3.6.1 Types I and II.

3.6.1.1 Civil agencies. In addition to the markings specified in 5.3, the directions for use specified in 3.6.2 shall be durably and legibly marked on the unit and shipping container in accordance with commercial practices and the Federal Hazardous Substances Act.

3.6.1.2 Military requirements (type I). In addition to the markings specified in 5.3, the directions for use specified in 3.6.2 shall be durably and legibly marked on a waterproofed tag secured to the paper shipping sack by wire attachment or stitching in accordance with MIL-STD-129 and shall conform to the Federal Hazardous Substances Act.

3.6.2 Directions for use. The manufacturer's recommended dilutions and "Directions for Use" shall be shown on the labels of the containers for types I and II dishwashing compounds and the necessary precautionary warnings, if any.

3.7 Workmanship. The finished product shall be free-flowing, uniform in appearance, and free from foreign matter.

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. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Sampling for inspection and acceptance. Sampling for inspection and acceptance shall be performed in accordance with the provisions set forth in MIL-STD-105, except where otherwise indicated herein. For purposes of sampling, an inspection lot for acceptance inspection and tests shall consist of all material of the same type, using same manufacturing procedures submitted for inspection and delivery at one time.

4.3 Inspection.

4.3.1 Inspection and test of the end item. The end item shall be examined in accordance with the classification of defects, inspection levels and acceptable quality levels (AQL's) set forth below. The lot size, for purpose of determining the sample size in accordance with MIL-STD-105, shall be expressed in units of filled primary containers of dishwashing compound of the same type for examinations under 4.3.2.

4.3.1.1 Examination of the end item container for defects in appearance of dishwashing compound. The sample unit for this examination shall be one filled primary container. The inspection level shall be S-2 with an AQL of 2.5 expressed in terms of percent defective.

Examine	Defect
Appearance of dishwashing compound	Form not as specified. Not free-flowing. Lumping or caking. Presence of dirt or foreign matter. Not homogeneous. Any evidence of segregation. Not clear or opaque, as applicable. Not pourable, too viscous. Objectionable odor.

4.3.1.2 Testing of the end item. The end item shall be tested for the characteristics listed in table II for each lot presented for examination for each type of material. Sixteen ounces of the dishwashing compound of type I or 1 pint of the dishwashing compound of type II shall be drawn from each of five shipping containers selected throughout the lot presented for inspection and composited. The test sample shall consist of a 32-ounce composite of type I dishwashing compound or 4-pint composite of type II dishwashing compound. Unless otherwise specified, two determinations shall be performed on the composite with no evidence of failure to meet the specified requirements.

TABLE II. Instructions for testing end item

Characteristics	Specification reference Requirement	Test method	Number determinations per unit composite 1/	Results reported as Pass or fail 2/	Numerically to nearest
Moisture and matter volatile at 105°C	Table I	4.4.1	2		0.1 percent
Synthetic organic detergents	Table I	4.4.2	2		0.1 percent
Condensed phosphates (as P_2O_5)	Table I	4.4.3	2		0.1 percent
Silicates (as SiO_2)	Table I	4.4.4	2		0.1 percent
pH of 1.0 percent solution	Table I	4.4.5	1		0.1 pH unit
pH of 10.0 percent solution	Table I	4.4.5	1		0.1 pH unit
Bulk density, type I	Table I	4.4.6	1		g/ml
Particle size	Table I	4.4.7	1		0.1 percent
Viscosity	Table I	4.4.8	2		1.0 centipose
Sugar	Table I	4.4.9	1	X	
Total alkalinity (as Na_2O)	Table I	4.4.10	2		0.1 percent
Solubility in hard water	3.2	4.4.11	2	X	
Rinsing properties	3.3	4.4.12	2	X	
Suds stability in presence of grease:					
Heights of suds (initial)	3.5	4.4.13	2		1/4 inch
Heights of suds (after washing)	3.5	4.4.13	2		1/8 inch

1/ Test report shall include all values on which results are based.
2/ If failure is indicated, report either description of failure or numerical point of failure, as applicable.

4.3.2 Examination of preparation for delivery. An examination shall be made to determine compliance with the requirements of section 5. Defects shall be scored as specified in table III. The sample unit shall be one shipping container fully prepared for delivery. The lot shall be number of containers offered for delivery at one time. The inspection level shall be S-2 with an AQL of 4.0 expressed in terms of percent defective.

TABLE III. Examination of preparation for delivery

Examine	Defects
Containers	Not as specified. Any leakage of contents. Any split, break, dent, hole, tear, puncture, or other defects which may affect serviceability.
Contents	Not as specified.
Markings	Omitted; incorrect; illegible; improper size, location sequence or method of application.
Materials	Component missing or damaged.
Workmanship	Bulging or distortion of containers. Cushioning inadequate, improper or missing.

4.3.2.1 Examination for closure, waterproofing and banding of shipping container. When shipping containers are required to be in accordance with UU-S-48, PPP-C-96, or PPP-B-636, examination for defects in closure, waterproofing, and banding shall be made in accordance with the appendix to these specifications.

4.4 Test procedures.

4.4.1 Moisture and matter volatile at 105°C. The matter volatile at 105°C shall be determined in accordance with ASTM D 460, section 11.

4.4.2 Synthetic organic detergents. Weigh a 2.0 gm sample to the nearest mg into a 250-ml beaker. Dry the sample in an air-circulating oven at 105° ± 2°C overnight. Determine the alcohol-soluble matter in accordance with ASTM D 820, sections 13 to 15. Dissolve the alcohol-soluble residue in 100 ml of distilled water and determine the chloride content in accordance with ASTM D 820, sections 39 to 41.

Percent synthetic detergents = percent alcohol-soluble matter minus percent sodium chloride in alcohol-soluble matter.

4.4.3 Condensed phosphates (type I, class 2). Determine the condensed phosphates (as P_2O_5) content of a 4.0 percent (by weight) aqueous solution of dishwashing compound.

4.4.3.1 Reagents.

(a) Concentrated nitric acid.
(b) Ammonium molybdate-vanadate solution-dissolve 40 g of ammonium molybdate $(NH_4)_6 Mo_7O_{24} \cdot 4H_2O$) in 400 ml of water. Dissolve 1.0 g of ammonium metavanadate (NH_4VO_3) in a mixture of 300 ml of water and 200 ml of concentrated nitric acid. Add the first solution to the second solution, mix, and dilute to 1 liter with water.
(c) Phosphate Standard-Dissolve 1.9175 g of reagent grade monopotassium dihydrogen phosphate (KH_2PO_4) which has been previously dried at 105° ± 2°C for 1 hour in a liter of distilled water. Ten ml of this solution is diluted to 100 ml with distilled water. One ml of this solution is equivalent to 0.1 mg of P_2O_5.

4.4.3.2 Calibration. Pipet 5, 10, 15, 20 and 25 ml of phosphate standard into a series of 100-ml volumetric flasks equivalent to 0.5, 1.0, 1.5, 2.0 and 2.5 mg of P_2O_5, respectively. Add to each flask 25 ml of ammonium molybdate-vanadate solution, mix, and dilute each flask to volume with distilled water. Allow 5 minutes for the color development. Measure the color absorbance at 400 to 420 nm with a filter photometer or at 420 nm in a 10-mm cell with a spectrophotometer using distilled water as the reference solution. Plot milligrams of P_2O_5 on the abscissa and absorbance on the ordinate of linear graph paper. A straight line should be obtained passing through the point of origin. A separate calibration curve must be made for each photometer. Each curve must be checked periodically to insure reproducibility.

4.4.3.3 Orthophosphate. Dilute 10 ml of a 4.0 percent (by weight) solution of dishwashing compound to 100 ml with distilled water. Pipet 5.0 ml of this solution into a 100-ml volumetric flask. Add about 50 ml of distilled water, 25 ml of ammonium molybdate-vanadate solution, mix, and dilute the flask to volume with distilled water. Allow 5 minutes for the color development. Measure the color absorbance in a 10-mm cell at 420 nm with a spectrophotometer using water as the reference solution. Determine the milligrams of P_2O_5 in the 5.0-ml aliquot by referring absorbance value to the reference curve. Calculate the percent of orthophosphate as follows:

Orthophosphate (as P_2O_5), percent = Milligrams of P_2O_5 from reference curve X 5

4.4.3.4 Total phosphates. Pipet 25 ml of a 4.0 percent (by weight) solution of dishwashing compound into a 250-ml beaker. Add 100 ml of distilled water and 20 ml of concentrated nitric acid. Insert a stirring bar and boil gently on a hot plate, equipped with stirrer, for at least 30 minutes. Add distilled water to the beaker to maintain a volume between 50 to 100 ml. Cool to room temperature, remove the stirring bar and transfer the solution, quantitatively, to a 250-ml volumetric flask. Dilute to the mark with distilled water. Pipet 2.0 ml of this solution into a 100-ml volumetric flask. Add 25 ml of ammonium molybdate-vanadate solution and dilute to the mark with distilled water. Allow 5 minutes for the color development. Measure the color absorbance in a 10-mm cell at 420 nm with a spectrophotometer using water as the reference solution. Determine the milligrams of P_2O_5 in the 2.0-ml aliquot by referring absorbance value to the reference curve. Calculate the percent of total phosphates as follows:

Total phosphates (as P_2O_5), percent = Milligrams of P_2O_5 from reference curve X 12.5

4.4.3.5 Condensed phosphates. Calculate the percent condensed phosphates as follows:

Condensed phosphates (as P_2O_5), percent = Total phosphates (as P_2O_5), percent minus Orthophosphate (as P_2O_5), percent.

4.4.4 Total silicates (as SiO_2). Determine silicates in accordance with sections 18-21 of ASTM D 800.

4.4.5 pH value.

4.4.5.1 Apparatus. A pH meter having a sensitivity and readability of 0.05 pH units shall be used. The pH meter equipped with a glass electrode shall be standardized with standard buffer solution of pH 10 and checked with a standard buffer solution of pH 7.0.

4.4.5.2 Procedure. Prepare a 1.0 percent (by weight) solution of the type I dishwashing compound or a 10.0 percent (by volume) solution of the type II dishwashing compound in freshly boiled distilled water or deionized water which has been cooled to room temperature. Measure the pH of the dishwashing compound solution at 23° to 25°C. Do not correct the results for sodium ion concentration.

4.4.6 Bulk density. Weigh 50.0 ± 0.01 grams of dishwashing compound into a 100 ml graduated cylinder from which the lip has been removed. Stopper the graduate and pass a closely fitting glass or metal sleeve, about 3 inches long, over it. Clamp the sleeve to a ringstand. Place a large rubber stopper under the cylinder and adjust the sleeve so that the graduate will be 10 centimeters above the rubber stopper when the base of the graduate touches the lower edge of the sleeve, then release. Read the volume of the dishwashing compound to the nearest milliliter and calculate the bulk density in grams per milliliter.

4.4.7 Particle size.

4.4.7.1 Apparatus. Test shall be made using a single-eccentric type mechanical shaker which imparts to the sieves a rotary motion and tapping action of uniform speed of 300 ± 15 gyrations and 150 ± 10 taps of the striker per minute. Sieves shall conform to RR-S-366.

4.4.7.2 Procedure. Place 100 ± 0.01 grams of dishwashing compound on the coarser screen of the nest of appropriate sieves and screen in shaking apparatus. Continue screening for 5 minute intervals until the weight retained on finer screen is reduced by not more than 0.1 g during successive intervals. Weigh material on finer screen and calculate percent of material falling within the appropriate range.

4.4.8 Viscosity. The viscosity shall be determined in accordance with ASTM D 2983. A Brookfield Synchro-Lectric viscosimeter equipped with a No. 2 spindle and operated at 50 r.p.m. shall be used.

4.4.9 Sugars. Sugars in dishwashing compound shall be determined in accordance with ASTM D 460, sections 86 to 87.

4.4.10 Total alkalinity. Dissolve 10.0 ± 0.1 g of the material in distilled water at room temperature and titrate the solution electrometrically against standard 1.0 N hydrochloric acid to pH 3.4. Calculate the percent alkalinity as sodium oxide (Na_2O).

4.4.11 Solubility in hard water.

4.4.11.1 Type I, class 1 and type II. Dissolve 1.0 g of dishwashing compound in 100 ml of 20 grain hard water (see 4.4.11.2). Warm to 45° ± 1°C to facilitate solution. After stirring the warm solution for 5 minutes, observe type I, class 1 for completeness of solution and observe type II solution after standing 1 hour for any separation of liquid and solid components.

4.4.11.2 Preparation of 20 grain hard water. Twenty grain hard water shall be prepared by dissolving 0.404 g calcium chloride dihydrate and 0.136 g magnesium chloride hexahydrate in distilled water and then diluting to 1 liter of solution.

4.4.12 Rinsing properties.

4.4.12.1 Procedure (synthetic hard water). Dissolve 0.5 grams of type I, and 1.0 ml of type II of the dishwashing compound as completely as possible in 98 ml of 20-grains synthetic hard water (see 4.4.11.2) at room temperature (25° + 2°C), in a very clean 250-ml Erlenmeyer flask. Stopper the flask and shake vigorously for 1 minute. Pour out the solution. Rinse the flask by the same procedures, using three 75-ml portions of synthetic hard water alone. Invert the flask and allow to dry, and examine for any residue not rinsed from the interior. The flask shall contain no more residue after being dried than a similar flask allowed to dry after rinsing with hard water alone.

4.4.13 Suds stability in the presence of grease.

4.4.13.1 Test materials.

(a) Twenty grain hard water. Prepare as specified in 4.4.11.2.
(b) Vegetable shortening. (Solid hydrogenated vegetable shortening.)

4.4.13.2 Test equipment.

(a) Glass cylindrical jar. Pyrex, height 10 inches, outside diameter 8-3/4 inches, capacity 2 gallons.
(b) Glass funnel. Kimble glass, length of stem 150 mm, outside diameter of top of funnel 200 mm min, capacity approximately 1500 ml.
(c) Dish cloth. Loosely knit cloth of heavy cotton yarn, size approximately 12 by 14 inches, weight approximately 2 ounces.

4.4.13.3 Procedure. Approximately 1/2 hour prior to testing, apply 25 + 0.1 g of vegetable shortening to one side of a clean dish cloth with a spatula. Using both hands work the vegetable shortening into the cloth for approximately 1 minute, or until the shortening is no longer visible on the surface of the cloth. Dissolve 8 g of the dishwashing compound in 4 liters of 20 grain hard water warming the solution to 45° to 47°C and keeping the suds to a minimum. With the glass funnel centered over the 2-gallon jar and the tip of the funnel 24 inches above the bottom of the jar, pour the solution through the funnel into the jar. Turn the jar during the last funnel full to even the height of the foam. One minute after generating the suds, measure the height of suds to the nearest 1/4 inch. Two minutes after generating the suds, immerse the vegetable shortening soiled cloth in the dishwashing compound solution and wash the cloth for 3 minutes. Using both hands, squeeze the cloth alternately while immersed in the solution and above the surface of the solution. After 3 minutes washing, wring out the cloth and measure the height of the residual suds to the nearest 1/8 inch.

5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, or Commercial, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Type I. Type I dishwashing compound does not require packaging.

5.1.1.2 Type II. Type II dishwashing compound shall be furnished in 1-gallon or 5-gallon quantity, as specified (see 6.2).

5.1.1.2.1 One-gallon quantity. One gallon of type II dishwashing compound shall be packaged in an oblong metal can conforming to type V, class 4 of PPP-C-96. Each can shall be exterior coated in accordance with plan B.

5.1.1.2.2 Five-gallon quantity. Five-gallons of type II dishwashing compound shall be packed in a 5-gallon capacity metal pail conforming to type I, class 3 of PPP-P-704. Each pail shall be provided with a flexible spout pouring device as specified in PPP-P-704.

5.1.2 Commercial. The dishwashing compounds shall be preserved and packaged in accordance with normal commercial practice.

5.2 Packing. Packing shall be level A, or Commercial, as specified (see 6.2).

5.2.1 Level A.

5.2.1.1 Type I. Fifty pounds of type I dishwashing compound of one class only shall be packed in a sack conforming to UU-S-48, type II, III, or IV, style A or B, construction number 14X.

5.2.1.2 Type II.

5.2.1.2.1 One-gallon quantity. Six metal cans of dishwashing compound shall be packed in accordance with the appendix of PPP-C-96 for level A packing.

5.2.1.2.2 Five-gallon quantity. Five gallons of type II dishwashing compound, packaged as specified in 5.1, shall not require overpacking.

5.2.2 Commercial. The dishwashing compound shall be packed in shipping containers to insure safe delivery at destination to provide for safe redistribution by initial receiving activity, and shall be acceptable by common carrier under the National Motor Freight Classification or Uniform Freight Classification.

5.3 Marking.

5.3.1 Civil agencies. The unit and shipping containers and unitized loads (when applicable) shall be marked in accordance with 3.6 and Fed. Std. No. 123.

5.3.2 Military requirements. The unit and shipping containers shall be marked in accordance with 3.6 and MIL-STD-129.

5.4 Unitization. (Applicable to full rail car and truck load shipments only.) The dishwashing compound shall be unitized for shipment in accordance with normal commercial practice. The unitized load shall not exceed 2,500 pounds in weight, 63 inches in height, 56 inches in length, and 45 inches in width.

6. NOTES

6.1 Intended use. Types I and II dishwashing compounds covered by this specification are intended to be used in soft or hard water for hand dishwashing.

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

(a) Title, number, and date of this specification.
(b) Type and class of dishwashing compound required.
(c) Packaging and packing required (see 5.1 and 5.2).
(d) Quantity required (see 5.1 and 5.2).

MILITARY INTERESTS:

CUSTODIANS:

Army - GL (MCA)
Navy - SH
Air Force - 84

REVIEW ACTIVITIES:

Army - MD
Air Force - 03

USER ACTIVITIES:

Navy - SH, MS

CIVIL AGENCY COORDINATING ACTIVITIES:

VA-DMS
HEW-NIH
CPSC

PREPARING ACTIVITY:

GSA-FSS

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