

**SPECIFICATION
FOR
SOAPS, HAND**

(This specification is released for procurement purposes until revised or rescinded.)

SCOPE

This specification covers milled toilet soap, liquid toilet soap, and lotion soap. Waterless type hand cleaners are not covered in this specification. This specification is not meant to cover all varieties of toilet soap which may be commercially available, but is intended to cover those generally used by State agencies, schools, and colleges.

I. CLASSIFICATION

Toilet soaps covered by this specification are classified as follows:

Type A - Milled Toilet Soap

<u>Class</u>	<u>Description</u>
1	Plain - Tallow/Coconut Base
2	Deodorant - Tallow/Coconut Base W/Bacteriostat

Type B - Liquid Toilet Soap

<u>Class</u>	<u>Description</u>
1	Liquid, ready to use
2	Concentrated

Type C - Lotion Soap

<u>Class</u>	<u>Description</u>
1	Synthetic detergent base
2	Combination synthetic detergent & soap base
3	Soap base

II. APPLICABLE STANDARDS

The following documents of issue in effect on the date of the Invitation for Bids shall form a part of this specification:

- ASTM D 455-69 (1990)E1 - Standard specification for Milled Toilet Soap
- ASTM D 799-74 (1990)E1 - Standard specification for Liquid Toilet Soap

ASTM D 4011-81 (1986) - Standard specification for Lotion Soap
ASTM D 460-91 - Standard test methods for sampling and chemical analysis of soaps and soap products.

Chapter VI of the Federal Food, Drug and Cosmetic Act with amendments and Code of Federal Regulations, Title 21, Subchapter G, Part 700.

III. REQUIREMENTS

A. TYPE A. MILLED TOILET SOAP

1. General Requirements

- a) Shall be suitable for use in institutional restrooms, kitchens and hospitals.
- b) Shall be a high grade, milled cake soap, either colored or uncolored, mildly perfumed, the odor shall not be objectionable, as free as possible from water, thoroughly saponified, and well compressed in firm, smooth cakes of a size and shape specified in the Invitation for Bids. It should lather freely when used with cold, soft water.
- c) Additives such as bactericides, germicides and deodorants, may be added as specified by the purchaser.

2. Chemical Composition

Milled toilet soap shall conform to the following requirements as to chemical composition. The percentage of matter volatile at 105°C shall be calculated on the basis of the soap as received, but all other constituents shall be calculated on the basis of material containing 15% of matter volatile at 105°C.

-	Moisture and matter volatile at 105°C, max, %	15(A)	
-	Sum of free alkali, total matter insoluble in alcohol, and sodium chloride, max,%		3.0
-	Free alkali, calculated as NaOH, max,%	0.1	
-	Matter insoluble in water, max,%	1.0	
-	Unsaponified saponifiable matter (free fat), max,%		0.3
-	Rosin acids, and foreign matter	none	
-	Anhydrous soap content, min,%	83.0	

(A) Deliveries which yield more than 15% volatile matter shall be rejected without further test.

B. TYPE B. LIQUID TOILET SOAP

1. General Requirements

- a) Class 1 - Liquid, ready to use
 - (1) Shall be suitable for use in institutional restrooms, kitchens and hospitals.
 - (2) Shall be a clear or colored, uniform solution of potash soap in water, with or without glycerol or alcohol. The soap shall be produced by the saponification of either whole vegetable oils or distilled fatty acids or

both, or rosin acids, with caustic potash. It shall be ready for use and shall form a satisfactory lather.

- (3) Shall be mildly perfumed, the odor shall not be objectionable in the soap as received, or in a hot solution of the soap in water. The material shall not leave any objectionable odor on the skin or other surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water.
- (4) Shall not have any undue corrosive action on the containers, liquid soap lines, dispensers or valves.
- (5) Additives, such as coconut oil may be specified by the purchaser.

b) Class 2 - Concentrated

- (1) Shall be suitable for use in institutional restrooms, kitchens and hospitals.
- (2) Shall be a concentrate containing sufficient organic sequestering agent that when the concentrate is diluted for use with 1.5 parts of ordinary tap water a stable solution having satisfactory lathering properties will result.
- (3) Shall be mildly perfumed, the odor shall not be objectionable in the soap as received, or in a hot solution of the soap in water. The material shall not leave any objectionable odor on the skin or other surfaces after washing with a water solution of the soap and rinsing thoroughly with plain water.
- (4) Shall not have any undue corrosive action on the containers, liquid soap lines, dispensers or valves.

2. Chemical Composition

Liquid toilet soap shall conform to the requirements as to chemical composition prescribed in Table 1. All constituents shall be calculated on the basis of the soap as received.

TABLE 1 Chemical Requirements

	<u>Class 1</u>	<u>Class 2</u>
Total anhydrous soap, calculated as potash soap, min,%	15.0	30.0
Free alkali, calculated as KOH, max,%	0.05	0.12
Free acid, calculated as oleic acid, max,%	0.1	0.2
Matter insoluble in alcohol, max,%	0.5	1.2
Matter insoluble in water, max,%	0.1	0.2
Chlorides, calculated as KCl, max,%	0.3	0.7
Sulfates, max	trace	trace
Unsaponified plus unsaponifiable matter, max,%	0.6	1.4
Titer of mixed fatty acids, max		32
Acid number of mixed fatty acids:		
max	270	270
min	215	215
Rosin acids, max	1.0	2.3
pH(5% solution) max	10.2	10.2

Organic sequestering agent, min ... (A)
 (A) Class 2 shall contain sufficient organic sequestering agent to give a clear solution when one part of the concentrate is diluted with 1.5 parts of water having a hardness of 300 ppm as calcium carbonate.

C. TYPE C. LOTION SOAP (LIQUID)

1. General Requirements

- a) Shall be viscous liquid lotion soap to be used for general skin cleansing in restrooms and showers. Must be suitable for use in institutional restrooms, kitchens and hospitals.
- b) Lotion soap may be transparent or opaque, white, colorless, or colored with an approved dye. The odor shall be nonoffensive and pleasant. Lotion soap shall be free of abrasives and organic solvents.
- c) Lotion soaps shall clean common dirt-type soils from human skin. Lotion soaps shall be flowable, lather in most types of water, completely rinsed with water and leave no significant residue on the skin. Lotion soaps may contain sequestering agents or antimicrobial ingredients, or both.
- d) The ingredients in lotion soap formulation shall be safe for use on normal human skin when used in accordance with directions. The formulation shall not contain any prohibited ingredients as designated by the Food and Drug Administration and shall meet the requirements of Chapter VI of the Federal Food, Drug and Cosmetic Act with amendments and Code of Federal Regulations, Title 21, Subchapter G, Part 700.
- e) Lotion soap shall have a shelf life of 1 year when stored between 50 and 90°F (10 and 32°C). If short periods of freezing or extremely warm temperatures will adversely affect the product during transportation or storage, the packaging of the lotion soap shall be marked with the specific conditions which must be avoided.
- f) Lotion soap shall have sufficient flow characteristics to effectively dispense from commercial lotion dispensers that are recommended for lotion soap dispensing. The lotion soap shall be tested in the purchased dispenser/valve system to verify that the dispenser/valve system shall not corrode and that the lotion soap will be dispensed properly.
- g) Additives, such as Lanolin, may be specified by the purchaser.

2. Physical Requirements

All classes of lotion soap covered in this specification shall conform to the physical requirements given in Table 2.

TABLE 2 Physical Requirements

<u>Properties</u>	<u>Requirements</u>		<u>Determination</u>
	<u>min</u>	<u>max</u>	
Viscosity, 70°F(21°C), cp	500	5 000	Brookfield Viscometer Method D 2196
Specific gravity, 60°F(16°C)	0.95	1.05	Hydrometer Method D3142
Flash point, °F(°C)	200(93°C)	none	Pensky-Martens, Method D 93 or Setaflash Method D 3278
pH, 5% solution (distilled water)	4	10	pH meter, Method E 70

3. Type C. Lotion Soap (Liquid)

- a. Title, number, and date of this specification.
- b. Whether (A) detergent base, (B) combination synthetic and detergent base, or (C) soap base.
- c. Additives, such as lanolin, etc.
- d. Size of containers.
- e. Method of packaging and shipping.

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