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DEPARTMENT OF COMMERCE.

BUREAU OF STANDARDS.

S. W. STRATTON, Director.

CIRCULAR OF THE BUREAU OF STANDARDS.

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UNITED STATES GOVERNMENT SPECIFICATION FOR SOAP POWDER.

FEDERAL SPECIFICATIONS BOARD.

STANDARD SPECIFICATION No. 28.

This Specification was officially adopted by the Federal Specifications Board on June 20, 1922, for the use of the Departments and Independent Establishments of the Government in the purchase of materials covered by it.

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1. GENERAL.

The material desired under this specification is a uniform mixture of soap and sodium carbonate in powdered form. It should be readily soluble in tepid water and should contain no free caustic alkali or inert fillers. Bidder shall state size and number of pounds to the package.

Failure to meet any of the following requirements will be cause for rejection.

Anhydrous soap shall be not less than 15 per cent.

Sodium carbonate (Na₂CO₃) shall be not less than 30 per cent. (The aggregate of anhydrous soap and sodium carbonate shall be not less than 55 per cent.)

Material will be purchased by net weight.

2. SAMPLING.

(a) **WHEN PACKED IN CANS OR CARTONS.**—One can or carton shall be taken at random from not less than 1 per cent of the vendors' shipping containers, provided such containers contain not less than 50 pounds each. In the case of smaller containers a can or carton shall be taken at random from each lot of containers totaling not to exceed 5,000 pounds. The total sample shall in all cases consist of not less than three cans or cartons taken at random from separate containers. With very large lots where the sample drawn as above will amount to more than 20 pounds the percentage of packages sampled shall be reduced, so that the amount drawn shall not exceed 20 pounds. Wrap the individual cans or cartons tightly in paraffined paper at once and seal by rubbing the edges with a heated iron. The inspector should accurately weigh each wrapped can or carton, record its weight and the date of weighing on the wrapper, place the wrapped cans or cartons in an air-tight container, which should be nearly filled, seal, mark, and send to the laboratory for test. Samples should be kept cool until tested. The seller shall have the option of being represented at the time of sampling, and when he so requests shall be furnished with a duplicate sample.

(b) **WHEN IN BULK.**—A grab sample of not less than one-half pound shall be taken at random from not less than 1 per cent of the vendors' shipping containers, provided such containers contain not less than 100 pounds each. In case of smaller containers a grab sample of not less than one-half pound shall be taken at random from each lot of containers totaling not to exceed 10,000 pounds. The total sample shall in all cases consist of not less than three grab portions taken at random from separate containers. With very large lots where the sample drawn as above will amount to more than 20 pounds the percentage of packages sampled shall be reduced, so that the amount drawn shall not exceed 20 pounds. The inspector should rapidly mix the sample, place in an air-tight container, which shall be filled, seal, mark, accurately weigh, record its weight and date of weighing on the package, and send to the laboratory for test. Samples should be kept cool until tested. The seller shall have the option of being represented at the time of sampling, and when he so requests shall be furnished with a duplicate sample.

3. LABORATORY EXAMINATION.

(a) PREPARATION OF SAMPLE.—Rapidly disintegrate and mix the sample, if desired quarter down to about 1 pound, and weigh out all portions for analysis at once. Unused portions of the sample used for analysis shall be preserved in an air-tight container in a cool place.

When a determination shows nonconformity with specification, a duplicate shall be run.

(b) ANHYDROUS SOAP.—Dissolve 5 g of the sample in about 200 cc of freshly boiled neutral (94 per cent or higher) ethyl alcohol, heating to complete the solution. Filter into a weighed beaker, and wash with hot, freshly boiled neutral alcohol. Evaporate the filtrate to dryness, dry at 105° C. to constant weight, and calculate as anhydrous soap.

(c) SODIUM CARBONATE.—Extract with hot water the matter insoluble in alcohol which is separated during the determination of anhydrous soap, add methyl orange to the water solution and titrate with standard acid, and calculate the percentage of sodium carbonate (Na_2CO_3).

4. REAGENTS.

(a) STANDARD SULPHURIC ACID SOLUTION.—0.5 N, or about 25.8 g strong sulphuric acid (specific gravity = 1.84) diluted to 1 liter. Standardized against standard sodium hydroxide solution (b).

(b) STANDARD SODIUM HYDROXIDE SOLUTION.—0.25 N, or about 10 g sodium hydroxide dissolved in water and diluted to 1 liter. Standardized against Bureau of Standards benzoic acid.

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