

**§ 137.175 Phosphated flour.**

Phosphated flour, phosphated white flour, and phosphated wheat flour, conform to the definition and standard of identity, and are subject to the requirements for label declaration of ingredients, prescribed for flour by § 137.105, except that:

(a) Monocalcium phosphate is added in a quantity not less than 0.25 percent and not more than 0.75 percent of the weight of the finished phosphated flour; and

(b) In determining whether the ash content complies with the requirements of this section allowance is made for the added monocalcium phosphate.

[42 FR 14402, Mar. 15, 1977, as amended at 58 FR 2877, Jan. 6, 1993]

**§ 137.180 Self-rising flour.**

(a) Self-rising flour, self-rising white flour, self-rising wheat flour, is an intimate mixture of flour, sodium bicarbonate, and one or more of the acid-reacting substances monocalcium phosphate, sodium acid pyrophosphate, and sodium aluminum phosphate. It is seasoned with salt. When it is tested by the method prescribed in paragraph (c) of this section not less than 0.5 percent of carbon dioxide is evolved. The acid-reacting substance is added in sufficient quantity to neutralize the sodium bicarbonate. The combined weight of such acid-reacting substance and sodium bicarbonate is not more than 4.5 parts to each 100 parts of flour used. Subject to the conditions and restrictions prescribed by § 137.105(a), the bleaching ingredients specified in such section may be added as optional ingredients. If the flour used in making the self-rising flour is bleached, the optional bleaching ingredient used therein (see § 137.105(a)) is also an optional ingredient of the self-rising flour.

(b) *Label declaration.* Each of the ingredients used in the food, shall be declared on the label as required by the applicable sections of parts 101 and 130 of this chapter.

(c) The method referred to in paragraph (a) of this section is the method prescribed in "Official Methods of Analysis of the Association of Official Analytical Chemists" (AOAC), 13th Ed.

(1980), section 8.002, "Reagent (Displacement soln.)," and section 8.003, "Chittick apparatus," under the heading "Total Carbon Dioxide (1)—Official Final Action," which is incorporated by reference. Copies may be obtained from the AOAC INTERNATIONAL, 481 North Frederick Ave., suite 500, Gaithersburg, MD 20877, or may be examined at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html). The following procedure is substituted for the procedure specified in the AOAC, under section 8.004, "Determination":

(1) Weigh 17 grams of the official sample into flask A, add 15–20 glass beads (4–6 mm. diameter), and connect this flask with the apparatus (fig. 22). Open stopcock C and by means of the leveling bulb E bring the displacement solution to the 25 cc. graduation above the zero mark. (This 25 cc. is a partial allowance for the volume of acid to be used in the decomposition.) Allow the apparatus to stand 1–2 minutes to insure that the temperature and pressure within the apparatus are the same as those of the room. Close the stopcock, lower the leveling bulb somewhat to reduce the pressure within the apparatus, and slowly run into the decomposition flask from burette F 45 cc. of sulfuric acid (1+5). To prevent the liberated carbon dioxide from escaping through the acid burette into the air, keep the displacement solution in the leveling bulb at all times during the decomposition at a lower level than that in the gas-measuring tube. Rotate and then vigorously agitate the decomposition flask for three minutes to mix the contents intimately. Allow to stand for 10 minutes to bring to equilibrium. Equalize the pressure in the measuring tube by means of the leveling bulb and read the volume of gas from the zero point on the tube. Deduct 20 cc. from this reading (this 20 cc. together with previous allowance of 25 cc. compensates for the 45 cc. acid used in the decomposition). Observe the temperature of the air surrounding the apparatus and also the barometric pressure and multiply the

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number of mL of gas evolved by the factor given in section 52.007, "Correction factors for gasometric determination of carbon dioxide," AOAC, 13th Ed. (1980), which is incorporated by reference (the availability of this incorporation by reference is given in paragraph (c) of this section), for the temperature and pressure observed. Divide the corrected reading by 100 to obtain the apparent percent by weight of carbon dioxide in the official sample.

(2) Correct the apparent percent of carbon dioxide to compensate for varying atmospheric conditions by immediately assaying a synthetic sample by the same method in the same apparatus.

(3) Prepare the synthetic sample with 16.2 grams of flour, 0.30 gram of monocalcium phosphate, 0.30 gram of salt, and a sufficient quantity of sodium bicarbonate U.S.P. (dried over sulfuric acid) to yield the amount of carbon dioxide recovered in assay of official sample. Determine this quantity by multiplying weight of carbon dioxide recovered in assay of official sample by 1.91.

(4) Divide the weight of carbon dioxide recovered from synthetic sample by weight of carbon dioxide contained in sodium bicarbonate used.

(5) Divide the quotient into the apparent percent of carbon dioxide in official sample to obtain percent of carbon dioxide evolved from the official sample.

[42 FR 14402, Mar. 15, 1977, as amended at 47 FR 11827, Mar. 19, 1982; 49 FR 10097, Mar. 19, 1984; 54 FR 24894, June 12, 1989; 58 FR 2877, Jan. 6, 1993]

### § 137.185 Enriched self-rising flour.

Enriched self-rising flour conforms to the definition and standard of identity, and is subject to the requirements for label statement of ingredients, prescribed for self-rising flour by § 137.180, except that:

(a) It contains in each pound 2.9 milligrams of thiamin, 1.8 milligrams of riboflavin, 24 milligrams of niacin, 0.7 milligrams of folic acid, and 20 milligrams of iron.

(b) It contains added calcium in such quantity that the total calcium content is 960 milligrams per pound. If a calcium compound is added for tech-

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nical purposes to give self-rising characteristics to the flour, the amount of calcium per pound of flour may exceed 960 milligrams provided that the excess is no greater than necessary to accomplish the intended effect. However, if such calcium is insufficient to meet the 960-milligram level, no claim may be made on the label for calcium as a nutrient.

(c) The requirements of paragraphs (a) and (b) of this section will be deemed to have been met if reasonable overages of the vitamins and minerals, within the limits of good manufacturing practice, are present to insure that the required levels of the vitamins and minerals are maintained throughout the expected shelf life of the food under customary conditions of distribution and storage. The quantitative content of the following vitamins shall be calculated in terms of the following chemically identifiable reference forms:

Vitamin	Reference form		
	Name	Empirical formula	Molecular weight
Thiamine ...	Thiamine chloride hydrochloride.	$C_{12}H_{17}ClN_4OS \cdot HCl$	337.28
Riboflavin ..	Riboflavin .....	$C_{17}H_{20}N_4O_6$	376.37
Niacin .....	Niacin .....	$C_6H_5NO_2$	123.11

(d) It may contain not more than 5 percent by weight of wheat germ or partly defatted wheat germ;

(e) When calcium is added as dicalcium phosphate, such dicalcium phosphate is also considered to be an acid-reacting substance;

(f) When calcium is added as carbonate, the method set forth in § 137.180(c) does not apply as a test for carbon dioxide evolved; but in such case the quantity of carbon dioxide evolved under ordinary conditions of use of the enriched self-rising flour is not less than 0.5 percent of the weight thereof;

(g) All ingredients from which the food is fabricated shall be safe and suitable. The vitamins and minerals added to the food for enrichment purposes may be supplied by any safe and suitable substances. Niacin equivalents as derived from tryptophan content shall