AOAC Official Method 932.20
Calcium Gluconate in Drugs

Colorimetric Method
First Action 1932
Final Action

(Applicable to preparations whose aqueous solutions are neutral and which do not contain salts of other optically active hydroxy acids. The optical rotation of calcium gluconate is enhanced with the addtion of uranyl acitate solution.)

Weigh two 0.5 g portions calcium gluconate or two 1 g portions powdered tablets containing ≤50% of the salt. If chocolate or fatty base is present, wash test samples several times on hardened filter with absolute ether, then warm residue until ether is driven off.

Transfer each portion to separate 25 mL volumetric flasks, add 15 mL H_2O, and warm until calcium salt dissolves. (Test samples containing cocoa will have undissolved residue.) Cool mixture to room temperature.

To one flask (No. 1) add 3.5 g *finely pulverized uranyl acetate,* stopper, and shake mechanically 1 h. (If agitation is not vigorous enough, >1 h of shaking may be required.) Let other flask (No. 2) stand. If test sample contains chocolate, add little alumina cream, **925.46B**(**b**) (*see* 44.1.07), to each flask. Cool to room temperature, dilute flask No. 1 to volume with *uranyl acetate solution* (10 g shaken with 95 mL H_2O until saturated and then filtered), and flask No. 2 with H_2O. Filter, and polarize each test solution in 200 mm tube, using 50 mm tube containing *1.8% $K_2Cr_2O_7$ (w/v) solution* as light filter. If solution is too dark to read in 200 mm tube, make reading in 100 mm tube and multiply result by 2. If X = rotation in °S of solution No. 2 and Y = rotation of solution No. 1, with 1 g test sample: % $Ca(C_6H_{11}O_7)_2 = 4.34 \times (Y - X)$; and with 0.5 g test sample: % $Ca(C_6H_{11}O_7)_2 = 8.52 \times (Y - X)$.

References: *JAOAC* **15,** 456, 461(1932); **16,** 379(1933); **17,** 425(1934).

CAS-299-28-5 (calcium gluconate)

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