

starch, per cent.	Rotation.
26	8.3
13	10.4
37	3.3
50	15.8
52	18.3
48	2.9
49	8.3
19	11.0
47	11.3
46	0.2
52	5.4
52	5.6
50	14.8
51	10.4
50	3.5

..... 4
method.... 0
ing starch with
e. This solution

..... 9
d..... 2

of several exper-
imented under III.

..... 133
..... 66
..... 32
..... 16.2

i cream of
up of 2 g.
group I (2) 167
..... 157

The mixture contains 0.798 g. tartaric acid as bitartrate and 0.058 g. tartaric acid as calcium tartrate, or total TH_2 0.856 g.

The amounts calculated from the rotations are :

Total TH_2 , 0.865 g., TH_2 as bitartrate, 0.815.

(110) *Test Analysis, Group II (1).*—A mixture was prepared corresponding to the sodii cit. tartras effervescens of the B.P.

13.72 grams sodium bicarbonate
4.92 grams citric acid
7.30 grams tartaric acid
4.05 grams sugar
30.00

The whole was dissolved in cold water and made up to 100 cc. (sol. *A*).

25 cc. of this solution and 1 cc. NH_4 made up to 50 cc. gave 334' (*a*).

25 cc. of *A* required 4.2 cc. concentrated HCl to decolorize methyl violet.

25 cc. of *A* were heated with 4.2 + 2.5 cc. HCl to 70° for ten minutes, then methyl orange was added and 5 + 1 cc. NH_4 . The solution, made up to 50 cc., gave a reading of (Temperature 20°) 125' (*b*) from which the sugar $\alpha = 3.97$ g.

From this the rotation of the uninverted sugar in the 10 is

$$3.97 \times 79.7 = 317'$$

and therefore the rotation of the tartaric acid

$$11' - 2 \times 334 - 317 = 351,$$

from which the weight of tartaric acid

$$11' - 4 \times 0.00519 = 351 = 7.28.$$

(111) *Test Analysis, Group II (2).*—"Effervescing magnesium sulphate" (B.P.) was prepared as follows :

20.0 grams magnesium sulphate
14.4 grams sodium bicarbonate
6 grams tartaric acid
6 grams citric acid
1.2 grams sugar

The analysis was carried out exactly as described in the account of this method in the text, 3. g. sodium phosphate being used to precipitate the magnesium.

The following readings were obtained :

(*c*) 68'
(*d*) (Temperature = 18°) 13'

from which

$$\text{the sugar, } \alpha = \frac{10 \times (68 - 2 \times 13) \times 1.254}{142 - \frac{1}{2}t} = 3.96,$$

and the tartaric acid,

$$\beta = 4 (68 - 79 \times 3.96) 0.00519 = 7.62.$$

In both the above experiments, it must be admitted, the tartaric acid comes out better than should be expected from the error in the sugar.