

ROTATION OF

100 cc. 647

100 cc. 641

100 cc. 155

100 cc. 155

100 cc. 156

100 cc. 161

should be avoided.

100 cc. 155

5 cc. ammonia ;

the equivalent

ROTATION OF

according to Cler.

hydrochloric acid

ammonia, the

change of color

to 25 cc. 145.5

to 25 cc. 147.5

to 25 cc. 138

re = 18°.)

concen-

..... 40

concen-

..... 40

concen-

..... 37

concen-

..... 39

cc. ammonia so

c. in 100 cc. or 1

OF SUGAR AND

lowing :

acid, and 4.2 g.

hydrochloric

..... 347

25 cc. of this solution, 2 cc. ammonia, 1 cc. hydrochloric acid, 5 g.

magnesium sulphate made up to 50 cc. 315

The same amount of magnesium sulphate, with ammonium chloride to prevent precipitation, has practically no effect on sugar alone.

EFFECT OF ALKALI AND ACID ON THE ROTATION OF TARTARIC ACID IN THE PRESENCE OF AMMONIUM MOLYBDATE.

(68) 3 g. TiH_2 3.33 cc. NH_3 in 100 cc. 145(69) 3 g. TH_2 45 cc. NH_3 in 100 cc. 147(70) 3 g. TH_2 3.33 cc. NH_3 , about 4 g. ammonium molybdate in 100 cc. 1501(71) 3 g. TH_2 45 cc. NH_3 , about 4 g. ammonium molybdate in 100 cc. 152(72) 3 g. TH_2 3.33 cc. NH_3 , about 4 g. ammonium molybdate, about 4 cc. concentrated nitric acid in 100 cc. 1147(73) 3 g. TiH_2 3.33 cc. NH_3 , about 4 g. ammonium molybdate, about 12 cc. concentrated nitric acid ... in 100 cc. 445(74) 0.64 g. KHT (impure), 0.65 cc. NH_3 , 4 g. ammonium molybdate, 4 cc. normal acetic acid in 100 cc. 297(75) 0.64 g. KHT (impure), 0.65 cc. NH_3 , 4 g. ammonium molybdate, 20 cc. normal acetic acid in 100 cc. 337(76) 0.64 g. KHT (impure), 0.65 cc. NH_3 , 4 g. ammonium molybdate, 40 cc. normal acetic acid in 100 cc. 355

THE NON-EFFECT OF ALUMINUM AND IRON SALTS, PHOSPHORIC ACID, AND SODIUM CARBONATE ON THE ROTATION OF TARTARIC ACID IN THE METHOD OF GROUP III.

In the following experiments the mixtures were treated according to the directions given under Group III.

(77) 0.1 g. KHT 65.5

(78) 0.1 g. KHT 66.5

(79) 0.1 g. KHT, 0.2 g. alum 65.5

(80) 0.1 g. KHT, 0.2 g. alum, 0.2 g. calcium acid phosphate 66.5

(81) 0.1 g. KHT, 0.1 g. sodium bicarbonate 66.5

(82) Similar results were obtained using 0.2, 0.05, and 0.025 g. of KHT.

(83) 0.2 g. KHT 130

(84) 0.2 g. KHT, 0.02 g. ferrous sulphate, 0.01 g. ferric chloride .. 130

The last two are earlier experiments and were made with solutions different from those described in the paper. For this reason the numbers are lower than those given below for 0.2 g. KHT, but the two readings show that iron has no influence.

EXPERIMENT TO TEST THE SOLUBILITY OF CALCIUM TARTRATE AND THE EFFECT OF STARCH.

The following were treated according to the method III.

(85) 0.2 g. KHT 134

(86) 0.1 g. KHT, 0.138 g. CaT (= 0.1 g. KHT), 0.2 g. alum, 0.3 g. phosphate cream of tartar substitute containing starch 133