POLARIMETRY IN COMMERCIAL PRODUCTS.

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ice is preplution are of concenimmonium aim is then ble to keep the bulk of the solution as small as possible, and to avoid unnecessary excess of salts in solution, the required quantity of phosphate (about 8 grams Na_2HPO_4 to H_2O to every 5 gran - MgSO_47H_2O) should be dissolved in a small volume of hot water (to cc. to 8 grams phosphate) and the solution added gradually while hot. After the precipitate has completely formed it is filtered off on the filter-pump and washed with small quantities of water, care being taken not to bring the total volume to more than 100 ec. Even a fairly bulky precipitate can be sufficiently washed in this way.

The filtrate is now made up to 100 cc. (Solution B), and part of this solution read at once in the polarimeter (reading c.)

Twenty-five cc. of Solution *B* are now titrated with hydrochloric acid and methyl violet, and another 25 cc. inverted as described under (1), made up to 50 cc. and polarized (reading *d*).

The weight of sugar (z) in the substance taken is

$$z = \frac{10(c-2d)1.254}{142-0.5t}.$$

The rotation of the tartaric acid is, therefore,

$$r = 10c - 79.7 z$$

and the weight of tartaric aeid,

 $y = 4 \times 0.00519.r.$

The directions given for this method are, of course, subject to slight modification depending on the relative amount of magnesium present; in some cases, for instance, more animonia than 6ec. might be necessary. It may be stated, however, that the amount of free ammonia in the uninverted solution is not of much consequence, but in the inverted solution the excess should not exceed 1 cc. (Appendix 51-66).

On account of the bulk of the magnesium precipitate, and because large quantities of neutral salts affect the rotation, it is necessary to work with weaker solutions when magnesium is present. For this reason only 10 ee, of Solution A are taken in (2).

In the Appendix test analyses are given of some efferveseing mixtures, as illustrating the methods used in Group II. It may, however, be pointed out here that the results of the analyses of commercial *granulated* effervescing preparations do not agree with

935