

case. The subsequent loss in weight was so slight (usually about one-tenth of a milligram in half an hour's heating at 210°), that no great error can have been introduced by neglecting it, whatever may have been its actual cause. The use of carbon dioxide to prevent the presence of oxygen in the solution during or after the precipitation of the antimony sulphide, seems to be quite unnecessary if the above directions be followed.

The rubidium was determined as chloride by evaporation of the filtrate, in which it was contained, in a platinum vessel. Before weighing, it was dried at about 230° and finally heated for a few moments to incipient redness. Special experiments showed that about one-tenth of a milligram of rubidium chloride was lost in the final heating. A correction was therefore made for that loss. The amount of solid matter obtained by the action of the hot solution on the glass during the precipitation of the antimony was determined by a blank experiment under the same conditions. A correction for this gain in weight was introduced in each determination of rubidium.

Chlorine was usually determined by precipitation as silver chloride in a solution of the salt in water acidified with tartaric and nitric acids. The silver chloride was afterwards dissolved in ammonia and reprecipitated. Determination of the chlorine after precipitation of the antimony as sulphide was found extremely difficult. The presence of an excess of free hydrochloric acid seems necessary to bring the antimony sulphide into a condition suitable for filtration.

As the determination of the atomic ratio between antimony and rubidium seemed to promise to give results containing the slightest errors, special stress was laid, in the following analyses, on that ratio. The analyses of the salt gave these results:

I. 0.3844 gram gave 0.1288 gram Sb_2S_3 (23.915 per cent. Sb), and 0.2129 gram RbCl (39.137 per cent. Rb).

II. 0.4401 gram gave 0.1476 gram Sb_2S_3 (23.937 per cent. Sb), and 0.2436 gram RbCl (39.113 per cent. Rb).

III. 0.3936 gram gave 0.1316 gram Sb_2S_3 (23.864 per cent. Sb), and 0.2175 gram RbCl (39.049 per cent. Rb).

IV. 0.3867 gram gave 0.1297 gram Sb_2S_3 (23.939 per cent. Sb).

V. 0.4078 gram gave 0.6115 gram AgCl (37.08 per cent. Cl).

The atomic ratios of antimony to rubidium as deduced from the three analyses are: