gas through E to insure complete elimination of air. Open A to burette and draw in sample by opening B to drain. To obtain the volume at atmospheric pressure: With A closed, open C and, by admitting or withdrawing water, by means of B, the level of burette and leveling tube is easily obtained.

With A still closed, attach the appropriate pipette to the prolong of burette; open A to burette and force gas into pipette by filling burette with water by means of B. When absorption is complete, return gas to burette by opening B to drain; then level, as described above. If it is desired to shake the pipette, a swinging motion may be given to it without disconnecting from the burette. The rod D is long enough so that the hanging shelf, on which the explosion pipette and mercury reservoir are placed, may be thrown back out of the way when not in use. The ordinary absorbents are used.

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Note on the Standardization of Iodine Solutions.—During the course of some extensive investigations upon sodium thiosulphate, the thought suggested itself that very possibly the anhydrous salt might be readily prepared in a state of sufficient purity to serve as a reagent for the standardization of the iodine solutions used in the work. This has been found to be the case, and a very simple and practical, as well as exact, method has been devised for accomplishing this.

The anhydrous thiosulphate is best prepared by recrystallizing the chemically pure salt of commerce from warm solutions (saturated at from 30° to 35° C.) by cooling and constant stirring. The salt thus obtained is of about the grain of granulated sugar, and is to be dried on filter-paper at room temperature. It is then dehydrated over sulphuric acid until it has fallen to a powder, and a portion in a test-tube shows no sign of fusion when heated to 50°. The final dehydration is carried on in an air-bath at about 80°, with repeated stirring of the powder. For relatively small quantities two hours' heating will usually be sufficient. The salt is then to be placed in a tight-stoppered weighing-bottle, from which samples are taken as desired.

Following are some results obtained by the use of this salt. The method was simply to take a weighed sample, dissolve in water and titrate with the iodine solution to the appearance of the

blue color with starch solution. The figures are grams of thiosulphate, equivalent to 1 cc. of iodine solution.

Weight of sample.	Volume of iodine solution. cc.	Standard of solution.
0.8833	27.45	0.03228
0.7288	22.57	0.03227
0.9319	28.90	0.03224
0.6807	21.07	0.03229

The standard of the same iodine solution, as determined by the direct method with a weighed quantity of iodine, was 0.03228.

Three days later the following determinations were made with the same substance in order to see if there was any deterioration of the anhydrous salt within that time, due, perhaps, to absorption of moisture or other cause.

Weight of sample.	Volume of iodine solution. cc.	Standard of solution.
0.9404	29.30	0.03210
0.8338	25.92	0.03217
0.6100	18.92	0.03224
0.8518	26.47	0.03218

Two determinations by the direct method, made at the same time, gave 0.03217 and 0.03221.

Except for the first determination, the agreement is all that could be desired. There is more than likely a small experimental error in the first determination. S. W. YOUNG.

STANFORD UNIVERSITY,
May 19, 1904.

Note on the Effect of Old Filter-paper on Iodate-free Potassium Iodide.—In the course of some experiments with potassium iodide it developed that a dilute solution (1 in 10) of iodate-free salt, after filtering through the ordinary filter-paper of the laboratory and acidification with a few drops of dilute sulphuric acid after the manner of the United States Pharmacopœia test for iodate,[1] oftentimes showed a distinct brownish coloration after

[1] The Pharmacopoeia of 1890 recommends the use of starch paste to render the liberation of iodine evident by the formation of the characteristic starch-iodine blue. We find that the yellow coloration of the free iodine is as delicate and as easily seen in a colorless clear solution as the starch reaction. Hence we omitted the starch paste. We worked with 1 gram of potassium iodide in 10 cc. of water instead of 1 gram in 20 cc. as directed in the Pharmacopoeia. In all these tests it is necessary to run a blank on the iodide solution along with the test, since, as is well known, the acidified potassium iodide solution becomes brownish from the oxidation of the hydriodic acid by the oxygen of the air. If the time of standing be short, say three minutes, the blank solutions will be practically water-white, whereas the solutions treated with old filter-paper will be distinctly yellowish. The coloration corresponds, of course, to a very small weight of iodine: For 20 cc. of the solution, it required only two or three drops of N/100 thiosulphate solution to cause a complete bleaching.