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1. Preparation of 0.05M Iodine

Dissolve 20 g.of iodate-free potassium iodide in 30-40 cm^3 of water in a glass-stoppered 1-litre flask. Weigh out about 12.7 g.of AR. or resublimed iodine on a watch glass on a rough balance, and transfer it into the concentrated potassium iodide solution. Insert the glass stopper into the flask, and shake in the cold until all the iodine has dissolved. Allow the solution to acquire room temperature, and make up to the mark with distilled water.

The iodine solution is best preserved in small glass-stoppered bottles. These should be filled completely and kept in a cool, dark place.

2. Preparation of 0.1M Sodium thiosulfate

Weigh out 25 g.of AR sodium thiosulfate crystals, $Na_2S_2O_3 5H_2O$, dissolve in boiled-out distilled water, and make up to 1 litre in a volumetric flask with boiled-out distilled water. If the solution is to be kept for more than a few days, add 0.1 g.of sodium carbonate or 3 drops of chloroform.

3. Preparation and use of starch solution

Make a paste of 1.0 g.of soluble starch with a little water, and pour the paste, with constant stirring, into 100 cm^3 of boiling water, and boil for a minute. Allow the solution to cool. Keep the solution in a stoppered bottle.

Only freshly prepared or properly preserved starch solution should be used. Two cm^3 of a 1 percent solution per 100 cm^3 of the solution to be titrated is a satisfactory amount; the same volume starch solution should always be added in a titration. In the titration of iodine, starch must not be added until just before the end point is reached. Apart from the fact that the fading of the iodine colour is a good indication of the approach of the end point, if the starch solution is added when the iodine concentration is high, some iodine may remain absorbed even at the end point.

4. Preparation of 0.1N (0.025M) Potassium iodate

Dry some AR potassium iodate at 120°C for 1 hour and allow it to cool in a covered vessel in desiccator. Weigh out exactly 5.350 g. of the finely powdered potassium iodate on a watch glass, and transfer it into a dry 1-litre volumetric flask. Add about 400-500 cm^3 of water, and gently rotate the flask until the salt is completely dissolved. Make up to the mark with distilled water. Shake well. The solution will keep indefinitely.

It must be emphasised again that the solution is 0.025M only for the reaction:

$$IO_3^- + 6\,H^+ + Cl^- + 4\,e \rightleftharpoons ICl + 3\,H_2O$$

VITA

Mr. Kraireuhk Obromsuck was born on June 2, 1953 in Pang-nga Province. He entered the Faculty of Science, Prince of Songkla University in 1970 and got a B.Sc.(Hons.) in chemistry in 1974. He won the first prize in mathematics from Dr. Thab Neelaniti Foundation when he was in the first year. In the second and third year, he was awarded bronze medals and University Scholarship. He was also awarded a silver medal in his last year. After his graduation, he had further studied towards the Master of Science degree with the supporting of the University Development Commission Scholarship. During the times, he had good luck receiving an honour shield from the Science Society of Thailand under the Royal Patronage of H.M. the King as the first prize in competing to write a brief expression about fuel preservation.

Finishing his master' s degree, he is a lecturer at the Department of Chemistry, Faculty of Science, Ramkhamhaeng University.