

reaction should take place in the slightly acidic solution (pH around 4–5), correct pH is obtained by addition of ammonia and acetic acid which form an acetic acid/acetate buffer. The indicator will then not behave properly at the endpoint and a quantitative determination is not possible. Iodometry can be used to quantify oxidizing agents, whereas iodimetry can be used to quantify reducing agents. Starch is used as indicator in both iodometric and iodimetric titrations. This titrating species is a standard solution of a reducing agent, which is capable of reducing iodine back to iodide form. In iodimetry, free iodine is used to titrate with a reducing agent. Solution should be free of other substances that can oxidize iodides to iodine (Fe^{3+} or nitrates). In iodometry, iodides are allowed to react with another oxidizing agent in an acidic medium or neutral medium. When this reaction takes place, iodide (iodide will be added in the form of KI) will be oxidized to iodine and the other species will be reduced by iodide. This can be minimized by having a large excess of iodide in order to keep the iodine tied up as tri-iodide ion. So titrations involving iodine must be made in cold solutions in order to minimize loss through evaporation. Therefore, iodine will be reduced to iodide, and the other species present in the reaction vessel will be oxidized by iodine. The following are the most important sources of error in the iodometric method: Loss of iodine by evaporation from the solution. Therefore, iodimetry is a direct method and iodometry is an indirect method. The released iodine is then titrated with another species. Starch solutions that are no longer fresh or improperly prepared.