Spectrophotometric determination of trace Arsenic (III) ion based on complex formation with gallocyanine

Abstract

In this study, a simple, selective and sensitive method, for spectrophotometric determination of As(III) with gallocyanine as the sensitive reagent was developed. The wavelength of an analytical measurement, for the determination of As (III), using gallocyanine was at 630nm with an optimum response at pH 2. The RSD for the reproducibility of 100 ppm As(III) was 2.3%. The LOD was 0.04 ppm with linear dynamic range in As(III) concentration of 0.2 - 1.5 ppm. The developed method has been validated against Atomic AbsorptionSpectrophotometry (AAS). The interference study of several metal ions was carried out andit revealed that that Mn (II) ion was interfered the most.

Keyword: Gallocyanine; Arsenic determination; Metal toxicity