



Effect of Nonionic Surfactant (Triton X–114) on the Spectrophotometric Determination of Selenium (IV) With Isonitriso p-Isopropyl Acetophenone Phenyl Hydrazone

Battula Sreenivasa Rao^{*1}, Gurrala Srinivasa Rao^{*1}, B.V.Kiran^{*1} and K.Siva Nagaraju^{*2}

1. Department of Chemistry, GITAM Institute of Technology, GITAM University, Visakhapatnam- 530 045, Andhra Pradesh, India
 2. Department of chemistry, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur- Andhra Pradesh, India
- E-mail: battula_sr@gitam.edu

ABSTRACT

The effect of nonionic surfactant (Triton X–114) on the sensitive, simple and inexpensive, spectrophotometric method was developed for the determination of Selenium(IV) with Isonitriso p-Isopropyl Acetophenone Phenyl Hydrazone (HIPAPH). Selenium was complexed with Isonitriso p-Isopropyl Acetophenone Phenyl Hydrazone (HIPAPH) in presence of surfactant (Triton X–114). Absorption spectrum of Se-HIPAPH complex in the presence of surfactant medium shows a peak at 513 nm. Beer's law is valid over the concentration range 0.25-10.0 ppm of selenium (IV). Sandell's sensitivity of the reaction is found to be $3.462 \times 10^{-3} \text{ mg.cm}^{-2}$ and the molar absorptivity of the complex was $9.32 \times 10^4 \text{ dm}^3 \text{ mol}^{-1} \text{ cm}^{-1}$ at 513 nm. The composition of the complex (metal: ligand) was 1:2. The method was employed for the determination of selenium in Buck Wheat and Rajgira Seeds samples.

Keywords: Triton X–114, spectrophotometric method, Seenium, Isonitriso p-Isopropyl Acetophenone Phenyl Hydrazone.
