

ATOMIC ABSORPTION SPECTROMETRY (AAS I)

THE PURPOSE OF THE EXERCISE

Manganese determination in wastewater and/or vitamin samples using Flame Atomic Absorption Spectrometry (F AAS) technique.

PROCEDURE (APPARATUS AND REAGENTS)

1. Prepare a series of manganese standard solutions in volumetric flasks with concentrations from 20 $\mu\text{g/mL}$ (ppm) to 170 $\mu\text{g/mL}$ (ppm) from a 1mg/ml (1000 ppm) stock solution. Make up to the mark with distilled water.
2. Introduce approximately 10 mL of standard/sample solutions into the measuring vessels.
3. Start the apparatus in the presence of the supervisor.
4. Set the absorbance value to “0” for a blank sample.
5. Introduce into the system and record absorbance values for subsequent standard solutions starting from the solution of the lowest concentration.
6. Flush the system with distilled water.
7. Record the absorbance value of the sample (sewage and /or vitamin sample). After determining the absorbance of the sample, always flush the system (step 6)

PROCESSING THE RESULTS

1. Plot the calibration curve with absorbance as ordinate against concentration as abscissa.
2. Calculate the Mn concentration in the sample using the calibration curve prepared.

LITERATURE

1. D. Kealey, P. J. Haines, *Analytical Chemistry*
2. D. Harvey, *Modern Analytical Chemistry*
3. Douglas A. Skoog, Donald M. West, F. James Holler, Stanley R. Crouch, *Fundamentals of Analytical Chemistry*
4. Douglas A. Skoog, F. James Holler, Stanley R. Crouch, *Principles of Instrumental Analysis*
5. B. Sivasankar, *Instrumental Methods of Analysis*