

## FLAME PHOTOMETRY (FP)

### THE PURPOSE OF THE EXERCISE

Sodium and potassium determination in real samples using Flame Photometry (FP) technique. (e.g. mineral water, sewage, tap water).

### APPARATUS AND REAGENTS

Flapho 4 flame photometer, polyethylene volumetric flasks, pipettes, wash bottle.

### PROCEDURE

1. Prepare a series of both Na and K standard solutions in volumetric flasks of 100 mL with concentrations of: 5, 10, 15, 20, 30 i 40 ppm from a 1mg/mL (1000 ppm) stock solution. Make up to the mark with distilled water.
2. Transfer approximately 10 mL of standard/sample solutions into the measuring vessels.
3. Start the apparatus in the presence of the instructor. Calibrate the device. For a blank solution, set the intensity value to “0”, and for a standard solution containing 40 ppm of each ion, the emission value not exceeding “100” (read on the highest scale of the appropriate galvanometers, upper galvanometer for sodium, lower for potassium).
4. Set the intensity 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 intensity 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 intensity as ordinate against concentration as abscissa.
2. Calculate both Na, K concentration in the sample using the calibration curve prepared.

### LITERATURE

1. D. Kealey, P. J. Haines, *Analytical Chemistry*

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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*

