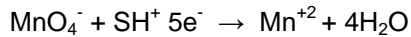


EXPERIMENT NO: 11

TOXICOLOGICAL ANALYSIS AND EVALUATION IN WATERS-2

1. Determination of Organic Substance in Water

It is based on the oxidation of organic substances in water by using permanganate in acid medium. The ability of the water to be oxidized is explained by mg potassium permanganate or by the corresponding mg oxygen used to oxidize the oxidizing agents in 1 liter of water.



Experiment Preparation: 100mL sample is taken. Add 10 mL dilute sulfuric acid solution and 10 mL of adjusted potassium permanganate solution and leave for 30 minutes in the water bath. The sample is removed from the water bath and immediately 10 ml of ammonium oxalate solution is added. In the warm state, titrated with a set of potassium permanganate solution until light pink is obtained. The result is mg per liter of oxygen.

The setting of the potassium permanganate solution is made with ammonium oxalate solution.

2. Determination of Chloride in Water

Mercury (II) method:

Chloride ions give mercury (II) chloride and non-dissociated mercury (II) chloride. As soon as the entire chloride ion is connected in this manner, the mercury gives a complex compound of blue-violet color with diphenylcarbazone. Experiment: To 100mL of water sample, 1mL of nitric acid and 1mL of diphenyl carbazone solution are added, followed by titration of the adjusted mercury (II) nitrate solution until a violet color is obtained. An empty experiment is carried out with 100 mL of distilled water. Expenditure is deducted to calculate the mg Cl⁻ ion in a liter of water. The setting of mercury (II) nitrate solution is made with sodium chloride solution.

3. Determination of Free Chlorine in Water

This test is for the determination of the residual free chlorine used for the disinfection of water. A solution of 100 mL of water + 1 mL of o-toluidine solution is allowed for 5 minutes.

Sensitivity: 0.01 mg per liter. This color formation is also carried out quantitatively by colorimetric determination.