

## **Ammonia Determination Method**

**Wear gloves and do analyses under fume hood.**

**All waste goes into waste disposal container.**

### **Phenol Solution**

Dissolve 20 g phenol in 200 ml of 95% v/v ethyl alcohol.

NOTE: PHENOL IS HIGHLY TOXIC

### **Sodium Nitroprusside**

Dissolve 1.0 g of Sodium Nitroprusside in 200 ml of DI water. Store in a dark bottle.

Stable for at least one month.

### **Alkaline Reagent**

Dissolve 100 g of sodium citrate and 5 g of NaOH in 500 ml of DI water.

Stable indefinitely.

### **Sodium Hypochlorite**

Use commercially available Chlorox.

### **Oxidizing Solution**

Mix 100 ml of Alkaline reagent and 25 ml of Chlorox.

Prepare fresh every time.

### **Procedure for Ammonia determination (modified from Parsons *et al.* 1984).**

Prepare standard solution using Ammonium Chloride ( $\text{NH}_4\text{Cl}$ ). Dissolve 1.908 g  $\text{NH}_4\text{Cl}$  in 500 ml DI water to give 1,000 mg / l ammonia-N. Prepare 0.2, 0.5, 1.0 and 2.0 ppm solutions by dissolving 0.02, 0.05, 0.10, 0.20 ml of the stock solution in 100 ml of DI water respectively.

Add 5 ml of sample water (or standard) to an Erlenmeyer flask, and 0.2 ml phenol solution and swirl. In sequence, add 0.2 ml of Nitroprusside and 0.5 ml of Oxidizing solution.

Swirl, stopper, and allow to stand for one hour. The color is stable for 24 hrs.

Determine absorbance at 640 nm.

Determine regression equation from blank and standard samples and estimate ammonia nitrogen in samples.