

POTASSIUM PERMANGANATE SOLUTION**PREPARATION**

Potassium Permanganate 0.1 *N*: Dissolve 3.3 g of reagent grade potassium permanganate (KmnO₄) in 1 L of purified water and heat on a steam bath for two hrs. Cover and allow to stand for 24 hrs. Filter through a fine porosity sintered glass crucible, discarding the first 25 mL. Store in a glass-stoppered, amber-colored bottle. Avoid exposure to direct sunlight; cover the neck of the bottle with a small beaker as a protection against dust. If manganese dioxide precipitates on standing, refilter and restandardize before use.

STANDARDIZATION

Potassium Permanganate 0.1 *N*: Weigh accurately 0.2-0.3 g sodium oxalate (Na₂C₂O₄) (dried 2 hrs., 105-110 °C) National Institutes of Science and Technology, U. S. Department of Commerce. Cool in a desiccator and transfer quantitatively to a 600 mL beaker. Add 250 mL of purified water (freshly boiled and cooled) and 10 mL sulfuric acid (96% H₂SO₄, sp g 1.84). Add rapidly from a buret about 95% of the theoretical quantity of potassium permanganate solution needed; stir until the solution is clear. Heat the solution to 55-60 °C (Maintain temperature range during titration.) and complete the titration by slow dropwise addition until the appearance of a pink color which persists for 30 secs. Determine and subtract a blank titration run at 55-60 °C on a mixture of 250 mL of purified water (freshly boiled and cooled) and 10 mL of concentrated sulfuric acid.

$$\text{Normality} = \frac{(\text{Wt. Na}_2\text{C}_2\text{O}_4, \text{g})(1000)}{(\text{Net Titer, mL})(67.00)}$$