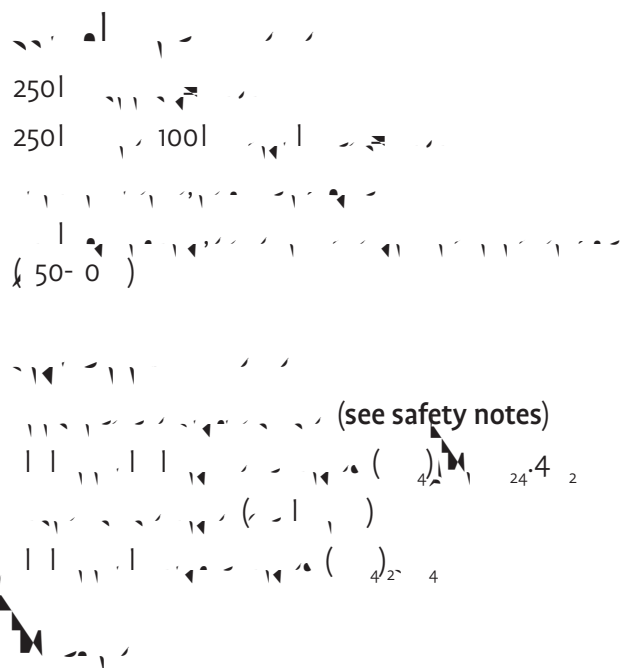


## Safety

Lab coats, safety glasses and enclosed footwear must be worn at all times in the laboratory.

Concentrated sulfuric acid is highly corrosive – wear rubber gloves and take care when handling. It will burn your skin, and leave a stain on your skin for some days. If you do splash some on your skin, wash it well with cold running water IMMEDIATELY. Make sure your teacher is told about it. Also, be careful of your clothes, as acid will burn holes in them. When diluting into water, ALWAYS dilute acid into water, and never add water to acid. When you heat your solutions with sulfuric acid, there is a chance that the flask could break. Make sure you have water ready to clean any spills. Your teacher or laboratory supervisor should be with you at all times when you are doing this.



## Sample Preparation

1. 250ml beaker, 50ml graduated cylinder, 100ml scale, 200ml beaker, 30ml graduated cylinder, 50ml graduated cylinder, 0.5ml graduated cylinder, 5ml graduated cylinder, 10ml graduated cylinder, 20ml graduated cylinder, 30ml graduated cylinder, 40ml graduated cylinder, 50ml graduated cylinder, 60ml graduated cylinder, 70ml graduated cylinder, 80ml graduated cylinder, 90ml graduated cylinder, 100ml graduated cylinder.
2. 250ml beaker, 100ml scale, 50ml graduated cylinder, 0.5ml graduated cylinder, 5ml graduated cylinder, 10ml graduated cylinder, 20ml graduated cylinder, 30ml graduated cylinder, 40ml graduated cylinder, 50ml graduated cylinder, 60ml graduated cylinder, 70ml graduated cylinder, 80ml graduated cylinder, 90ml graduated cylinder, 100ml graduated cylinder.
3. 10ml graduated cylinder, 200ml beaker, 30ml graduated cylinder.
4. 50ml graduated cylinder, 10ml graduated cylinder, 20ml graduated cylinder, 30ml graduated cylinder, 40ml graduated cylinder, 50ml graduated cylinder, 60ml graduated cylinder, 70ml graduated cylinder, 80ml graduated cylinder, 90ml graduated cylinder, 100ml graduated cylinder.

## Preparation of standard

1. Weigh 0.220 g of  $\text{K}_2\text{Cr}_2\text{O}_7$  (molar mass 294.18 g/mol) and dissolve it in 100 mL of distilled water in a 250 mL volumetric flask. Dilute to the mark with distilled water. This is a 0.00075 M solution.
2. Prepare a series of standard solutions by diluting the stock solution. For example, 10 mL of the stock solution diluted to 100 mL gives a 0.000075 M solution.

## Preparation of Complex

1. Weigh 0.500 g of  $\text{K}_2\text{Cr}_2\text{O}_7$  and dissolve it in 100 mL of distilled water in a 250 mL volumetric flask. Dilute to the mark with distilled water. This is a 0.0017 M solution. (see safety notes).
2. Weigh 0.200 g of  $\text{K}_2\text{Cr}_2\text{O}_7$  and dissolve it in 100 mL of distilled water in a 250 mL volumetric flask. Dilute to the mark with distilled water. This is a 0.00067 M solution.

## Colorimetric Analysis

1. Prepare a series of standard solutions by diluting the stock solution. For example, 10 mL of the stock solution diluted to 100 mL gives a 0.00017 M solution.
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