

DEMONSTRATION 6.5

IRON(II) SULFATE AND POTASSIUM PERMANGANATE

Green iron(II) sulfate solution is oxidised by a purple potassium permanganate solution, to give a colourless solution of iron(III) and manganese(II).

EQUIPMENT

- 100 mL measuring cylinder
- 2 L conical flask
- long glass rod
- light box

REAGENTS



- potassium permanganate, KMnO_4 (a few crystals)
- iron(II) ammonium sulfate-6-water, $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$ or Iron (II) sulfate (50 g)
- sulfuric acid, H_2SO_4 (2 M, 100 mL)
- distilled water

PREPARATION

- Dissolve 50 g iron (II) ammonium sulfate-6-water or Iron (II) sulfate in 150 mL of 2 M sulfuric acid.
- Set up the light box.
- Fill the conical flask with water and add crystals of potassium permanganate, sufficient to produce a solution which is strongly coloured without being opaque.
- Provide measuring cylinder and stirring rod.

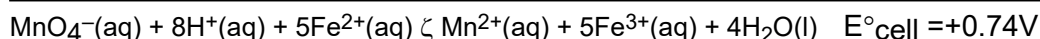
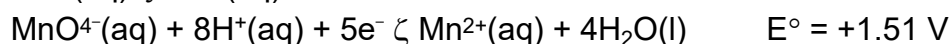
PROCEDURE

- Add 150 mL of the iron(II) sulfate solution to the potassium permanganate solution.
- Stir.

RESULTS

Permanganate is reduced to Mn(II) and Fe(II) is oxidised to Fe(III).

The reactions are:



High Risk Demonstration:

- Refer to HIRAC
- Set up in Red Tray