

Materials Required



Dil. Sulphuric acid



Black cotton cloth



Beaker (8 Nos)



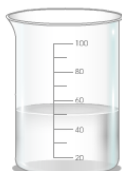
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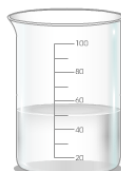
Glass rod (4 Nos)



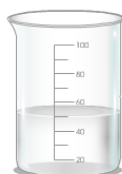
Bleaching powder



Sodium Chloride



Calcium Chloride



Ammonium Chloride



Water

Procedure

Real Lab Procedure

1. Place about 50 mL, 5% solution (by volume) of each of the four given samples of chemicals in four beakers. Label these beakers as A, B, C, and D where A contains bleaching powder, B contains sodium chloride, C contains calcium chloride, D contains ammonium chloride on the workbench.
2. Place about 20 mL of dilute sulphuric acid in each of the remaining four beakers. Label them as E, F, G, and H. (As mentioned above)
3. Dip a small piece of black cloth in beaker A.
4. Take out the cloth from beaker A using tweezers and dip it in dil. sulphuric acid in beaker E and stir it gently with the help of a glass rod.

5. Precaution: The glass rod used for one sample solution should be used for the other sample solution only after washing it with water.
6. Dip a small piece of black cloth in beaker B.
7. Take out the cloth from beaker B using tweezers and dip it in dil. sulphuric acid in beaker F and stir it gently with the help of a glass rod.
8. Dip a small piece of black cloth in beaker C.
9. Take out the cloth from beaker C using tweezers and dip it in dil. sulphuric acid in beaker G and stir it gently with the help of a glass rod.
10. Dip a small piece of black cloth in beaker D.
11. Take out the cloth from beaker D using tweezers and dip it in dil. sulphuric acid in beaker H and stir it gently with the help of a glass rod.

Simulator Procedure

Solution A (Sodium chloride)

1. Take small piece of black cloth and put it into the beaker containing 50mL of sodium chloride solution
2. Take the tweezer into the beaker containing 50mL sodium chloride solution.
3. Use the tweezer to pick the black cloth from the solution.
4. Put the cloth into the beaker containing 20mL. diluted sulphuric acid.
5. Put the glass rod into the beaker containing 20mL. diluted sulphuric acid.
6. Stir the solution with the help of a glass rod

Solution B (Calcium chloride)

1. Take small piece of black cloth and put it into the beaker containing 50mL of calcium chloride solution
2. Take the tweezer into the beaker containing 50mL calcium chloride solution.
3. Use the tweezer to pick the black cloth from the solution.
4. Put the cloth into the beaker containing 20mL. diluted sulphuric acid.
5. Put the glass rod into the beaker containing 20mL. diluted sulphuric acid.
6. Stir the solution with the help of a glass rod.

Solution C (Ammonium chloride)

1. Take a small piece of black cloth and put it into the beaker containing 50mL of solution C.
2. Take the tweezer into the beaker containing 50mL solution C.
3. Use the tweezer to pick the black cloth from the solution.

- Put the cloth into the beaker containing 20mL. diluted sulphuric acid.
- Put the glass rod into the beaker containing 20mL. diluted sulphuric acid.
- Stir the solution with the help of a glass rod.

Solution D (Bleaching powder)

- Take small piece of black cloth and put it into the beaker containing 50mL of ammonium chloride solution
- Take the tweezer into the beaker containing 50mL ammonium chloride solution.
- Use the tweezer to pick the black cloth from the solution.
- Put the cloth into the beaker containing 20mL. diluted sulphuric acid.
- Put the glass rod into the beaker containing 20mL. diluted sulphuric acid.
- Stir the solution with the help of a glass rod.

Observations

Sample	Colour of the cloth dipped in the solution of sample chemical	Colour of cloth (Dipped in sample solution and of sample chemical then in dil. sulphuric acid)
A		
B		
C		
D		

Result and Discussion

- Infer from the observations that which chemical solution decolourises the cotton cloth or flower petal. The chemical which decolourises, exhibits bleaching action. Thus, the bleaching powder can be identified.
- In this case, the solution in beaker ___ shows bleaching reaction and therefore the chemical in solution in that beaker is bleaching powder. The nascent oxygen produced by the decomposition of hypochlorous acid (HClO) is the cause for bleaching action.

Precautions

- Handle the sample solutions and sulphuric acid carefully. These must not touch your skin.
- Glass rod used for one sample solution should be used for the other sample solution only after washing it with water.