Date: 25/8/2023

Experiment 1: Qualitative Analysis of Inorganic Radicals.

Experiment	Observation	Inference
1) Reddish brown salt + dilute HCl + $K_4[Fe(CN)_6]$	Poussian blue colouration.	Fe^{3+} ions confirmed.
2) Greenish salt + distilled H_2O + NaOH bead	Dirty green precipitate	Fe^{2+} ions confirmed
3) Green salt + distilled H_2O + Few drops of NH_3 + DMG solution.	Rose red precipitate	Ni^{2+} ions confirmed.
4) White salt + distilled H_2O + few drops of HCl + $AgNO_3$ solution.	Offwhite to yellowish precipitate soluble in excess NH_4OH	Br^- ions confirmed
5) White salt + distilled H_2O + dilute HCl + $AgNO_3$ solution.	Yellow precipitate insoluble in excess NH_4OH.	I^- ions confirmed
6) White salt + distilled H_2O taken in a test tube. + 2mL freshly prepared $FeSO_4$ solution + Conc H_2SO_4 dropwise.	Formation of brown ring at the junction.	NO_3^- ions Confirmed.

Date: 28/08/2023

Experiment 2: Qualitative Analysis of Inorganic Salt.

Salt-1

~~Experiment~~

Physical Characteristics:

Colour: Blue

Texture: Crystalline

Solubility: Soluble in cold water.

Experiment	Observation	Inference
1) Pinch of salt + 2-3 drops of HCl + 2-3 drops of CH_3COOH + $K_4[Fe(CN)_6]$ solution.	Chocolate brown precipitate	Cu^{2+} confirmed
2) Pinch of salt + distilled H_2O + $BaCl_2$ solution	White insoluble precipitate	SO_4^{2-} confirmed

Conclusion: The given salt in $CuSO_4$.

Salt -2

Physical Characteristics

Colour : Colourless / White

Texture : Crystalline

Solubility : Soluble in water

Experiment	Observation	Inference
i) Pinch of salt + distilled H_2O + $(NH_4)_2SO_4$ solution	White insoluble precipitate	Sr^{2+} confirmed
2) Pinch of salt + distilled H_2O + 1-2 drops of HCl + $AgNO_3$ solution.	Curdy white precipitate which is soluble in excess NH_4OH.	Cl^- confirmed

Conclusion : The given salt is $SrCl_2$.