

The chemistry of silver – student sheet

In this experiment you will be looking at the properties of silver compounds

Procedure

1. Cover the worksheets with a clear plastic sheet.
2. Put one drop of silver nitrate solution in each box in the top two silver nitrate rows only. (The third row is left empty for now.)
3. Add one drop of each of the chloride, bromide and iodide solutions to the drop of silver nitrate solution in the appropriate box.
4. Make a cover from your piece of card and place it over all the drops in the first row only.
5. Record your observations of the uncovered row.
6. After 15 min remove the cover and compare the covered and uncovered rows.
7. Put one drop of silver nitrate solution in each box in the third silver nitrate row.
8. Add one drop of each of the chloride, bromide and iodide solutions to the drops of silver nitrate solution in the appropriate box.
9. Add five drops of ammonia solution to each of the drops.
10. Stir gently with the tip of a pipette.

	Chloride ions	Bromide ions	Iodide ions
Silver nitrate solution			
Silver nitrate solution			
Silver nitrate solution			

11. Record your observations.
12. Put one drop of silver nitrate solution in the box below.
13. Add one drop of iron(II) solution.
14. Observe closely using a magnifying glass

	Iron(II) solution
Silver nitrate solution	

Health, safety and technical notes

- Students must wear suitable eye protection (Splash resistant goggles to BS EN1663).
- Ammonia solution, 3 mol.dm⁻³ NH₃(aq) is CORROSIVE and a respiratory irritant.
- Iron(II) sulphate, 0.2 mol dm⁻³, FeSO₄.7H₂O(aq), Potassium bromide, 0.2 mol dm⁻³, KBr(aq) and Potassium iodide, 0.2 mol dm⁻³, KI(aq) are low hazard.
- Silver nitrate, 0.1 mol dm⁻³, AgNO₃(aq) is an eye irritant. Keep separate from organic waste containers.