

Sulfate and carbonate solubility of Groups 1 and 2 – student sheet

In this experiment you will be looking to see whether precipitates form when you add drops of solutions of sulfates or carbonates to drops of solutions of Group 1 or 2 metal ions.

You must wear eye protection.

Instructions

1. Cover the worksheets with a clear plastic sheet.
2. Put two drops of each of the metal ion solutions in each box of the appropriate row.
3. Add two drops of each of the anion solutions to the appropriate columns.
4. Observe and interpret your observations.

Group 1	Solution of sulfate ions	Solution of carbonate ions
Solution of lithium ions		
Solution of sodium ions		
Solution of potassium ions		

Group 2	Solution of sulfate ions	Solution of carbonate ions
Solution of magnesium ions		
Solution of calcium ions		
Solution of strontium ions		
Solution of barium ions		

Question

How do you account for your observations?

Health, safety and technical notes

- Wear eye protection throughout.
- The following chemicals are skin/eye IRRITANTS:
 - Magnesium nitrate, $\text{MgNO}_3 \cdot 6\text{H}_2\text{O}(\text{aq})$, 0.5 mol dm^{-3}
 - Calcium nitrate, $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}(\text{aq})$, 0.5 mol dm^{-3}
 - Strontium nitrate, $\text{Sr}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}(\text{aq})$, 0.5 mol dm^{-3}
 - Barium nitrate, $\text{Ba}(\text{NO}_3)_2$, 0.2 mol dm^{-3}
 - Sodium carbonate, $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$, 0.5 mol dm^{-3}
- The following chemicals are low hazard:
 - Sodium sulfate, $\text{Na}_2\text{SO}_4(\text{aq})$, 0.5 mol dm^{-3}
 - Sodium chloride, $\text{NaCl}(\text{aq})$, 0.5 mol dm^{-3}
 - Lithium bromide, $\text{LiBr}(\text{aq})$, 1 mol dm^{-3}
 - Potassium bromide, $\text{KBr}(\text{aq})$, 0.2 mol dm^{-3}