

S4 Chemistry Quiz
Test for Anions

Test	Test for	Reagent	Result
1	(a)	Dilute hydrochloric acid	Colourless gas bubbles
2	Cl ⁻ (aq)	(b) solution	White precipitate
3	SO ₄ ²⁻ (aq)	Acidified barium chloride solution	(c)

4. Name the "Colourless gas bubbles" in Test 1. (d)
5. Name the "White precipitate" in Test 2. (e)
6. If the cation in test 1 is ammonium ion, write a balanced chemical equation. (f)
7. If magnesium chloride is used in test 2, write a balanced chemical equation. (g)
8. If aluminium sulphate is used in test 3, write a balanced chemical equation. (h)

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Suggested Answers and Additional Information

Test	Test for	Reagent	Result
1	(a) $\text{CO}_3^{2-}(\text{aq})$	Dilute hydrochloric acid	Colourless gas bubbles
2	$\text{Cl}^-(\text{aq})$	(b) Acidified silver nitrate solution	White precipitate
3	$\text{SO}_4^{2-}(\text{aq})$	Acidified barium chloride solution	(c) White precipitate

4. Name the "Colourless gas bubbles" in Test 1.

(d) Carbon dioxide

5. Name the "White precipitate" in Test 2.

(e) Silver chloride

6. If the cation in test 1 is ammonium ion, write a balanced chemical equation.



7. If magnesium chloride is used in test 2, write a balanced chemical equation.



8. If aluminium sulphate is used in test 3, write a balanced chemical equation.



Addition Information

Test for	Reagent	Result
$\text{CO}_3^{2-}(\text{aq})$	Dilute hydrochloric acid / Dilute nitric acid	Colourless gas bubbles Carbon dioxide
$\text{Cl}^-(\text{aq})$	Acidified silver nitrate solution (Dilute nitric acid)	White precipitate Silver chloride
$\text{SO}_4^{2-}(\text{aq})$	Acidified barium chloride solution (Dilute hydrochloric acid) / Acidified barium nitrate solution (Dilute nitric acid)	White precipitate Barium sulphate

White precipitate = solid which is insoluble in water

Word Equations:

1. Metal carbonate + hydrochloric acid \longrightarrow Metal chloride + carbon dioxide + water
2. Metal chloride + silver nitrate \longrightarrow Metal nitrate + silver chloride
(AgCl = insoluble in water)
3. Metal sulphate + barium chloride \longrightarrow Metal chloride + barium sulphate
(BaSO₄ = insoluble in water)