

## Tests for anions

### Quiz 3.2 of the Royal Society of Chemistry's – Practical skills quizzes

Test	Observations	Inference
<b>Test for carbonate ions</b> Add dilute hydrochloric acid to the solid salt (or to a solution).	Gas which turns limewater milky as a white precipitate forms	Carbon dioxide from a carbonate
<b>Test for sulfate ions</b> Add a solution of barium chloride (or nitrate). If a precipitate forms add dilute hydrochloric acid	White precipitate which does not redissolve in acid	Precipitate of $\text{BaSO}_4$ from a sulfate
<b>Test for halide ions</b> Acidify with dilute nitric acid, then add silver nitrate solution  Test the solubility of any precipitate in ammonia solution	White precipitate soluble in dilute ammonia solution  Cream precipitate soluble in concentrated ammonia solution  Yellow precipitate insoluble in excess ammonia solution	Precipitate of $\text{AgCl}$ from a chloride  Precipitate of $\text{AgBr}$ from a bromide  Precipitate of $\text{AgI}$ from an iodide
<b>Test for nitrate</b>  Add sodium hydroxide and aluminium powder (or Devarda's alloy).  Warm the mixture gently and test for any gas given off using damp red litmus paper.	Gas given off turns damp red litmus paper blue; pungent smell also detected	Ammonia gas is given off from the reduction of nitrate ion to ammonia by aluminium in alkaline conditions



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