

Name:

Class:



The figure below shows two tests carried out on a white solid and the results of the tests.

	Test	Result(s)
Test 1	Flame test carried out	A yellow flame
Test 2	Dilute hydrochloric acid added. Gas given off is passed through limewater.	Effervescence occurs The limewater goes cloudy.

i. Which ion is shown to be present by the result of test 1?

Sodium

ii. State the name of the gas given off in test 2.

Carbon dioxide or CO₂

iii. State the name of the ion shown to be present in the white solid by the result of test 2.

Carbonate (ion)

Give the formula of a **hydrogencarbonate ion**.

HCO₃⁻

Give the formula of a **sulfate ion**.

SO₄²⁻

A nickel sulfate solution is made by dissolving 23.5 g of nickel sulfate to make 250 cm³ of solution. Calculate the concentration of the solution in g dm⁻³.

23.5 × 4 = 94 g/dm⁻³

Describe a test to show that a gas is hydrogen.

Test: lit splint.

Positive result: if the gas is hydrogen a squeaky pop is heard.

Describe a test to show that a compound contains sulfate ions.

Test: Add some HCl or HNO₃. Then add a few drops of Barium chloride solution.

Positive result: a thick white precipitate will be seen.

Balance the equation for the reaction between sodium hydroxide and sulfuric acid.

