

Name:

Class:



A sample of hydrogen is mixed with air and ignited. State what would happen.

A squeaky pop is heard

Molten lead bromide is electrolysed. The products of this electrolysis are?

Lead and bromine (gas)

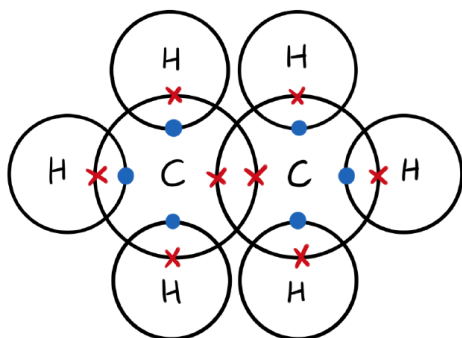
When molten zinc chloride is electrolysed, zinc ions, Zn^{2+} , form zinc atoms. Write the **half equation** for this reaction.



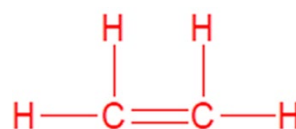
In the first stage of extracting nickel from nickel sulfide, the nickel sulfide, NiS , is heated in air to form nickel oxide, NiO , and sulfur dioxide. Write the balanced equation for this reaction.



Draw the dot and cross diagram for a molecule of **ethane**.



Draw the structural formula for a molecule of **ethene**.



Allow any correct version of this diagram.

Describe a test to show if carbonate ions are present in a sample.

Test: add an acid. Accept any acid.

Result: if a gas is produced bubble the gas through limewater. If the gas is carbon dioxide the limewater will go cloudy.

Describe a test to show if sodium ions are present in a sample.

Test: flame test.

Result: if a sample contains sodium ions it will produce a yellow flame in a flame test.

Calculate the mass of copper oxide required to produce 24.95 g of copper sulfate crystals ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$). Relative formula mass (Mr) of copper sulfate crystals = 249.5
Relative atomic masses (Ar): O = 16; Cu = 63.5

$$\text{Mr CuO} = 79.5$$

$$24.95 \div 249.5 \text{ or } 0.1$$

$$24.95 \div 249.5 \times 79.5 = 7.95$$

Mass of CuO = 7.95 g

What substance is added to a sample to test for the presence of sulfate ions?

Barium chloride solution.