

Marks
5

- Calcium carbide, CaC_2 , reacts with water to produce a gas and a solution containing OH^- ions. A sample of CaC_2 was treated with excess water and the resulting gas was collected in an evacuated 5.00 L glass bulb. At the completion of the reaction, the pressure inside the bulb was 1.00×10^5 Pa at a temperature of 26.8 °C. Calculate the amount (in mol) of the gas produced.

Answer:

Given that the mass of the gas collected was 5.21 g, show that the molar mass of the gas is 25.9 g mol^{-1} .

Suggest a molecular formula for the gas and write a balanced equation for the reaction that occurred.